Children's Television Workshop Enter the World of Science and Technology June 1985

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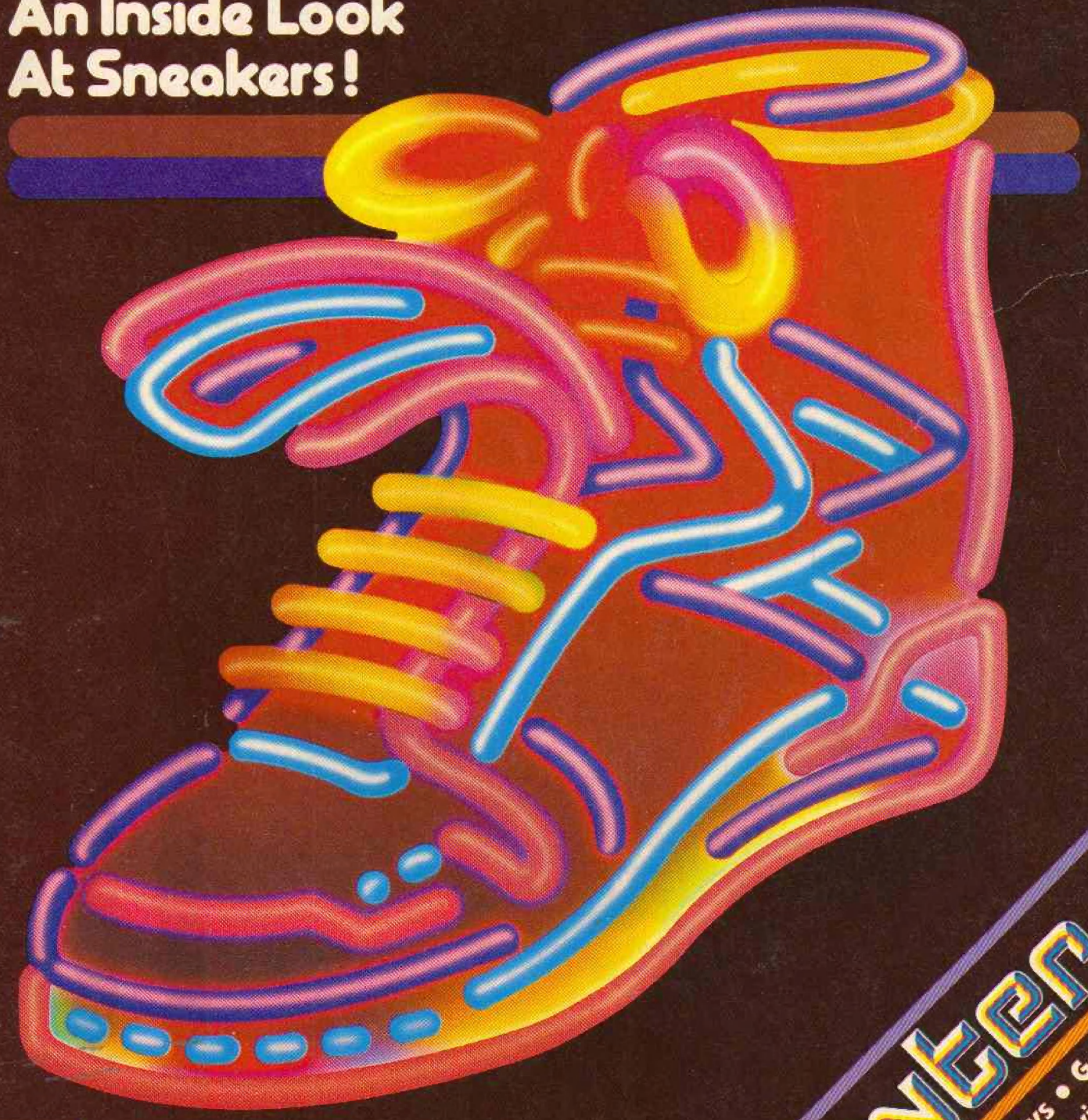

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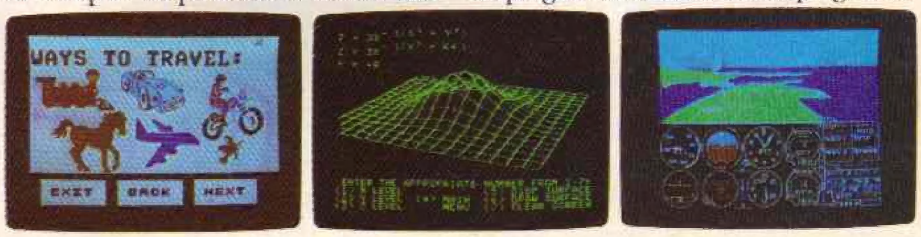

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Welcome and Welcome Back

Dear Readers,

As you read this issue, you'll notice a new section. ENTER, Children's Television Workshop's computer and technology magazine, has become part of CONTACT to bring you an even bigger and better magazine.

In the ENTER section, you'll find programs to run on your computer and challenging contests. If you've got problems or questions about computing, we'll bend over backwards to answer them. And we'll take a cold clear look at some of the newest and hottest software available to you.

What's that? Not into computers you say? Then get your minds sharpened for our pencil cruncher games and activities in the ENTER section. And check out the high-tech movie and TV news.

Of course, CONTACT will continue to bring you the world—from a scientist who flies through the trees of a tropical rain forest to an—um—"soleful" story of everyone's favorite footgear, the sneaker.

If you spend *any* time on the phone, then our "Future Phone" feature on page 28 is just for you. And speaking of the future, wait until you meet the Jetsons, a very funny family who lives in the 21st Century. It's all here in this issue of CONTACT.

To our ENTER friends we say, "Welcome. We think you're going to like us!" And to the readers who are our old friends, we think you're going to like us even more!

So what do you think? After reading this issue, let us know. Just write us at **3-2-1 Contact, One Lincoln Plaza, New York, NY 10023.** We can't wait to hear from you.

Sincerely,

Jonathan Rosenbloom

Jonathan Rosenbloom
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3-2-1 Contact is a publication of the Children's Television Workshop, published ten times during the year, monthly except for January and August.

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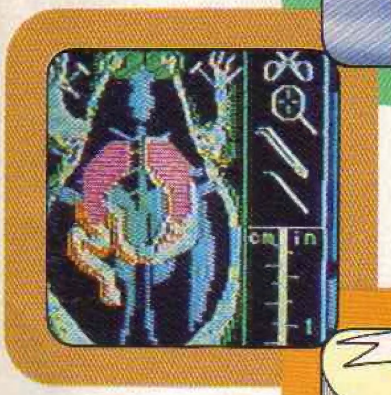
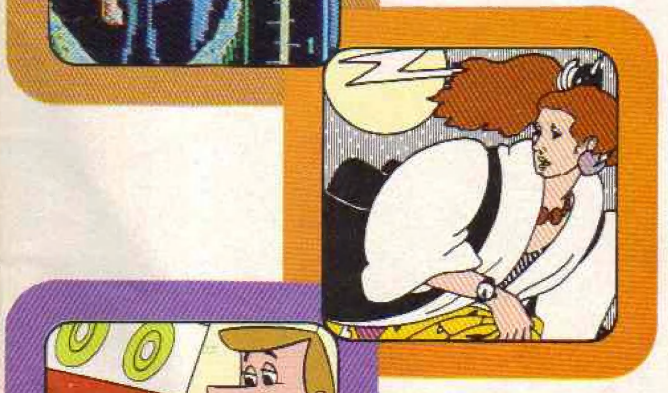
Printed in the U.S.A. Number 57, June, 1985. Editorial offices, 1 Lincoln Plaza, New York, N.Y. 10023. **Send subscription orders and change of address notices (including label from cover of magazine) to 3-2-1 Contact, P.O. Box 2933, Boulder, Colorado 80322.** Subscriptions: 1 year: U.S.A. $10.95; Canada and other countries $16.95. Bulk copy rates to schools and other institutions available on request.





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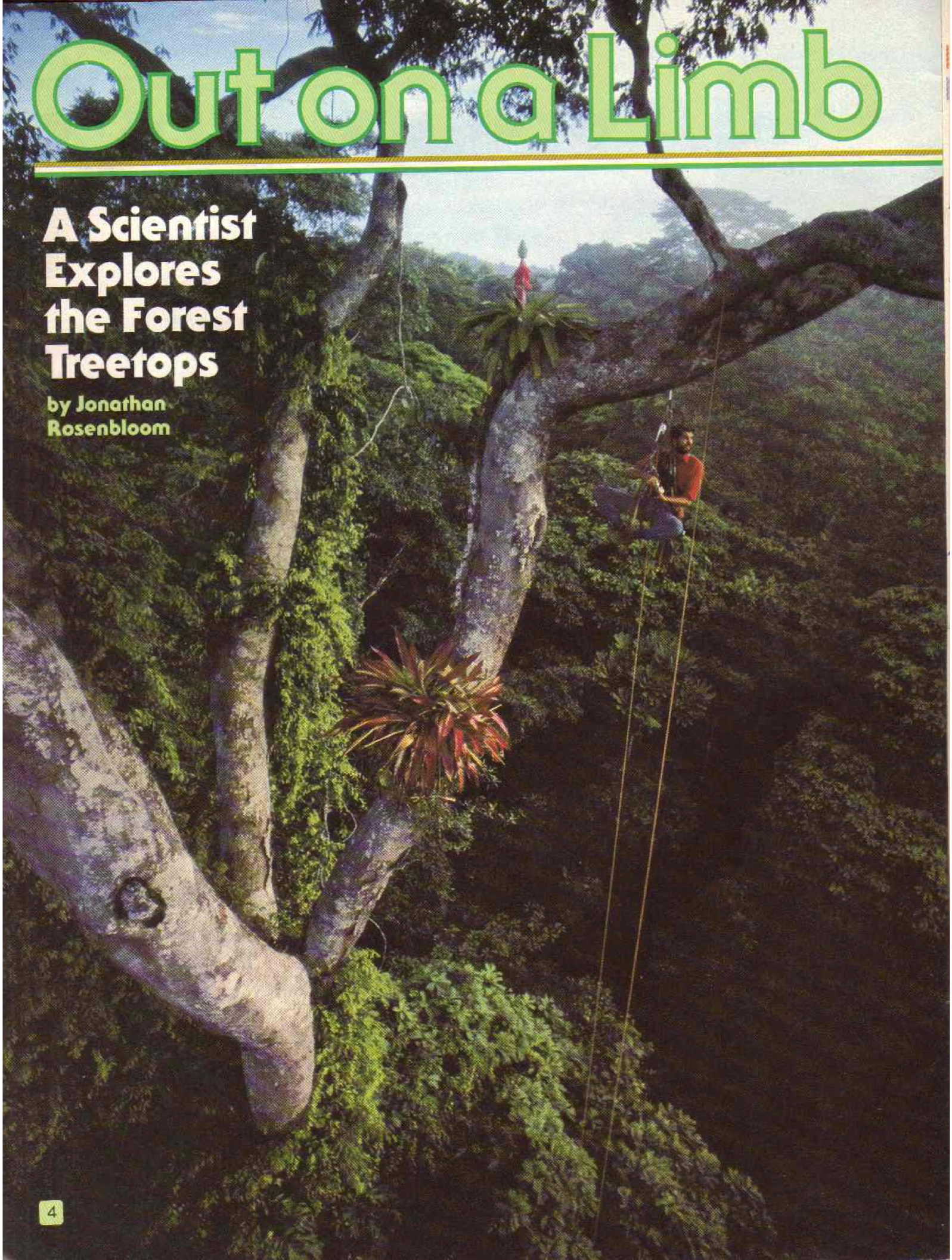
Cover Illustration © Kenvin Lyman

Out on a Limb

A Scientist Explores the Forest Treetops

by Jonathan Rosenbloom



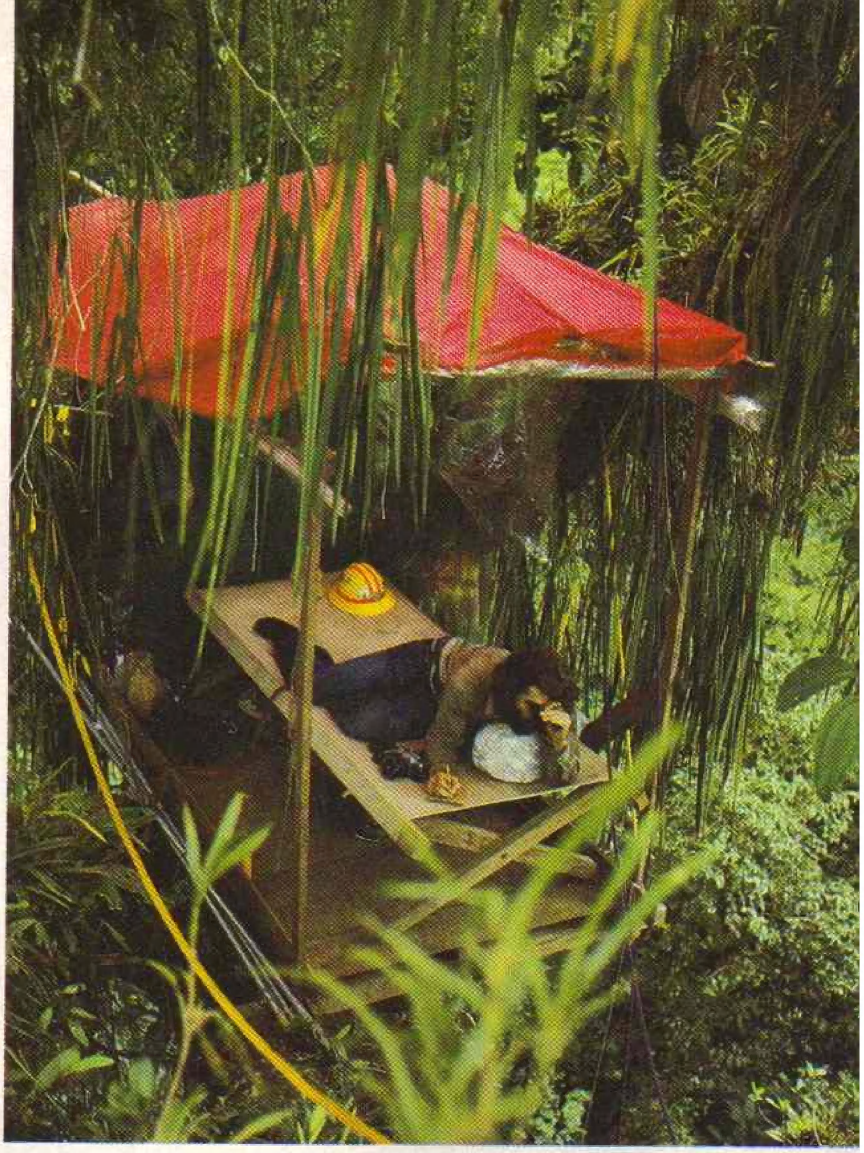
The man is climbing up the side of a tree. Monkeys swing from limb to limb, shaking the branches above him as he makes his way upward. Insects fly all around. The echoes of squawking parrots fill the sky.

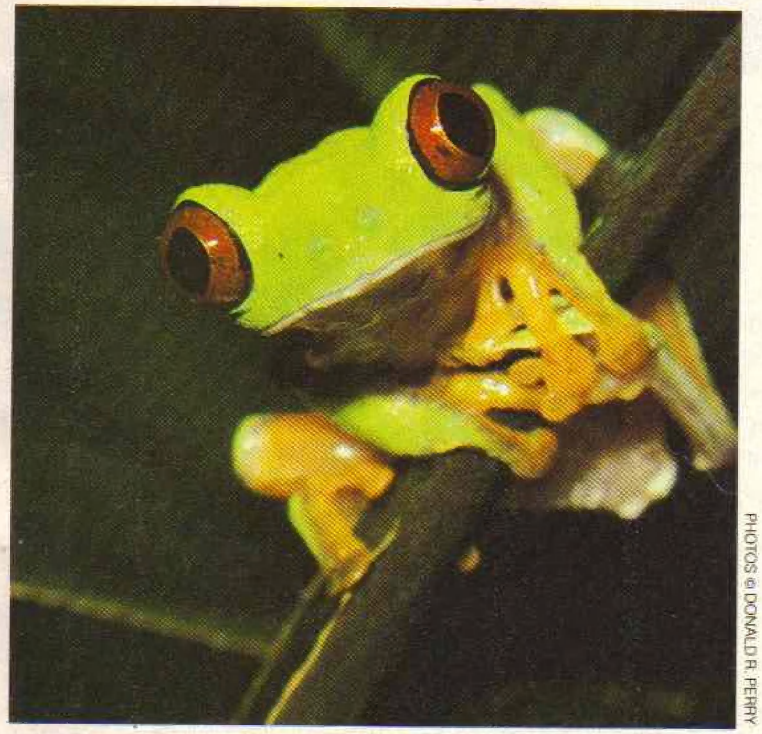
When he is about as high up as a six-story building, the man spies a large opening in the trunk. He wonders to himself, "What's in there?" Carefully he climbs inside. It is pitch black. Sweat pours from his body.

Dangling from a single rope, he slowly lowers himself into the inky blackness. A small light attached to his helmet spots hundreds of three-inch cockroaches crawling over the insides of the tree. A colony of bats whizzes above his head. Crickets, scorpions and centipedes scurry about. A poisonous tree viper comes within a finger's length of biting him. Once on the ground, his lamp scares a rat-like animal that disappears into the hollow roots of the tree.

This may sound like the beginning of an amazing adventure story. But it's far from make believe. It's just a day in the life of a scientist named Donald Perry.

Dr. Perry is a biologist who spends months at a time in the rain forests of Costa Rica—a nation in Central America. There





PHOTOS © DONALD R. PERRY

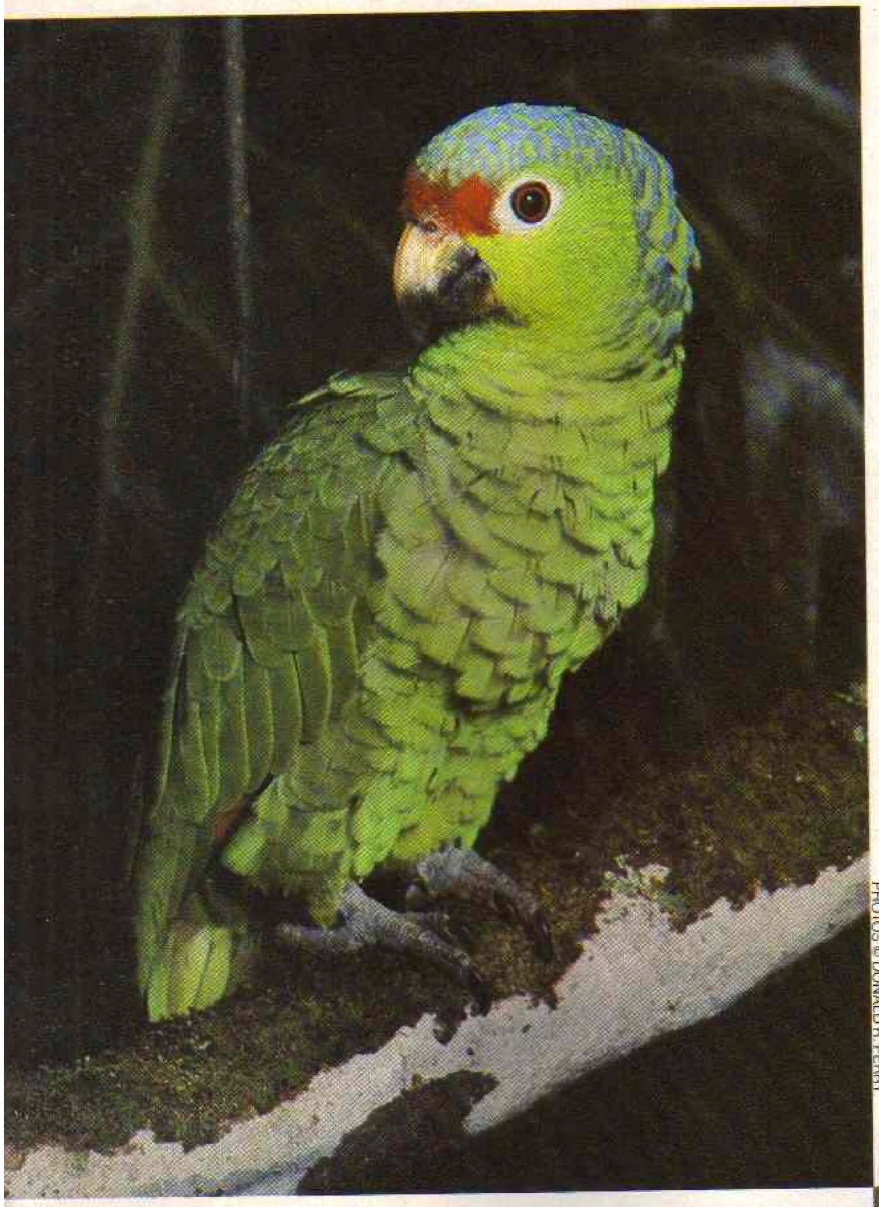
Above: **Donald Perry uses his platform in the rain forest canopy to make observations and to record his findings.**

Left: **This tree frog has tiny suckers on the ends of its fingers and toes. Suckers help the frog cling to the tree trunk as it climbs.**

he works in the treetops, studying the forest's "roof" or canopy.

In the canopy, huge limbs stretch out and join with other trees and vines. They form a sort of roof over the rest of the forest. Until Donald Perry came along, the canopy had never been studied thoroughly. It was so thick, scientists couldn't see it from the ground. So it remained an unexplored world of countless plants and animals.

But Donald Perry had an idea to get *above* the treetops. He developed a system ➳



PHOTOS © DONALD R. PERRY

to explore the fly-ways of birds and the paths of animals that live high above the ground.

Don uses a crossbow to shoot a rope up into the trees. He replaces that rope with a stronger one. Then he uses mountain climbing gear to go up into the trees. Once up top, Don ties the ropes onto the tips of the tallest—and strongest—trees. A pulley and a harness help him to move. (See the diagram at right.)

Some people have compared Donald Perry to Spiderman. That makes him laugh, but he *does* call the system of ropes in the trees his "web."

"It's not always easy and I'm not always relaxed as I move along the web. After all, it's a long way to fall!" he told 3-2-1 CONTACT.

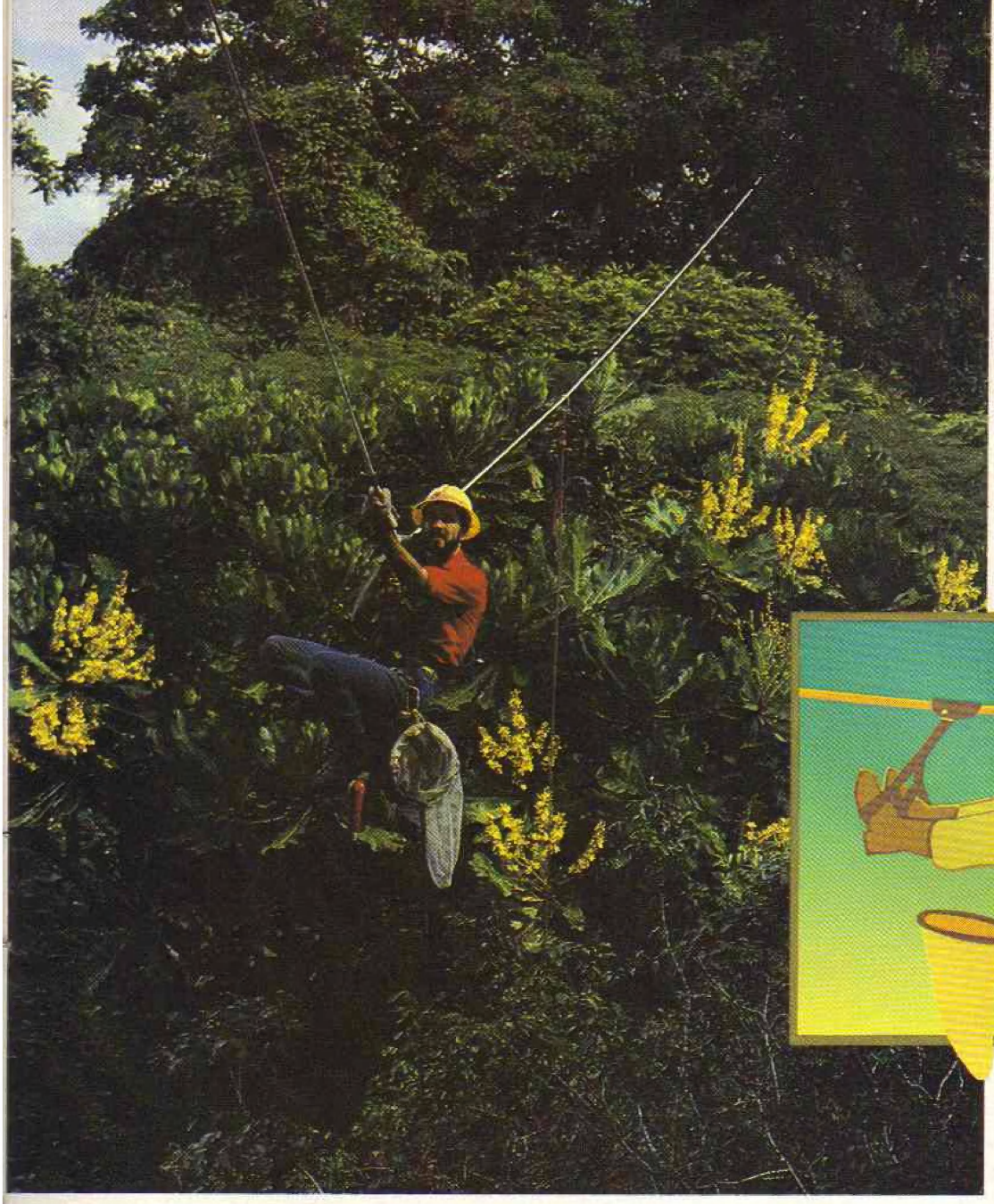
"But even so," he continues, "it's an incredible feeling to be suspended with a rope and harness in the fly-ways of birds and butterflies. When I'm up there with those animals, I feel as if I'm one of them. I see the world from their viewpoint," Donald says.

Life at the Top

And what a world it is! Sunlight bathes the canopy so that it is filled with flowering trees, plants, insects, birds, mice, centi-

Above: Colorful birds, including this red-lored parrot, live in the forest canopy.

Right: The great potoo bird blends in with its surroundings—120 feet above the ground. This is the first photo of the bird ever taken in its rain forest surroundings.



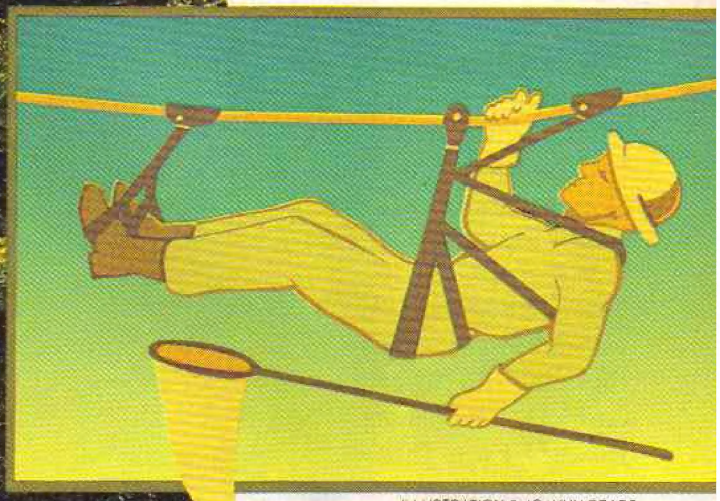


ILLUSTRATION © JO LYNN CRABS

Don Perry uses his web to swing above the treetops. His gloves protect his hands as he moves along the rope. Perry uses the net to capture insects and butterflies.

pedes, and monkeys. Two thirds of the rain forest's plants and animals live there.

Unfortunately, those insects, animals and plants are facing big trouble. As humans move in and clear the land for homes and farms, the forests are vanishing. "The forest may disappear by the year 2000," notes Donald Perry.

That's why Dr. Perry is going to great heights to learn about the rain forest—before it's too late. And the heights are very high!

The trees in the canopy grow as high as 150 feet—as tall as a 15-story building. "It's almost like Jack and the beanstalk," laughs Donald. "I found a giant pea tree that grows to huge heights. You won't find a giant living at the top, but there are insects and plants that you can find nowhere else on earth."

Ferns, mosses, orchids, and plants called epiphytes (ep-pu-fites) grow everywhere in the canopy. An epiphyte attaches itself by its roots to the bark. Trees provide the epiphyte with a sunny spot for growing.

"The epiphytes have developed a system for storing water. Many have hollow cups which hold water like a reservoir," notes Dr. Perry.

Epiphytes attract a whole bunch of bugs. "They are almost like swamps," the biologist explains. "They attract insects of all kinds, earthworms, spiders, scorpions, tree frogs, butterflies and insect-eating birds."

Some canopy animals have found ways to use the plants that grow there. For example, frogs in the treetops carry their eggs to a kind of plant that looks like a pineapple ➤➤

top. The leaves of this plant come together to form a cup that holds water. The frogs leave their eggs in the cup and it turns into a hatchery.

Treehouse Lab

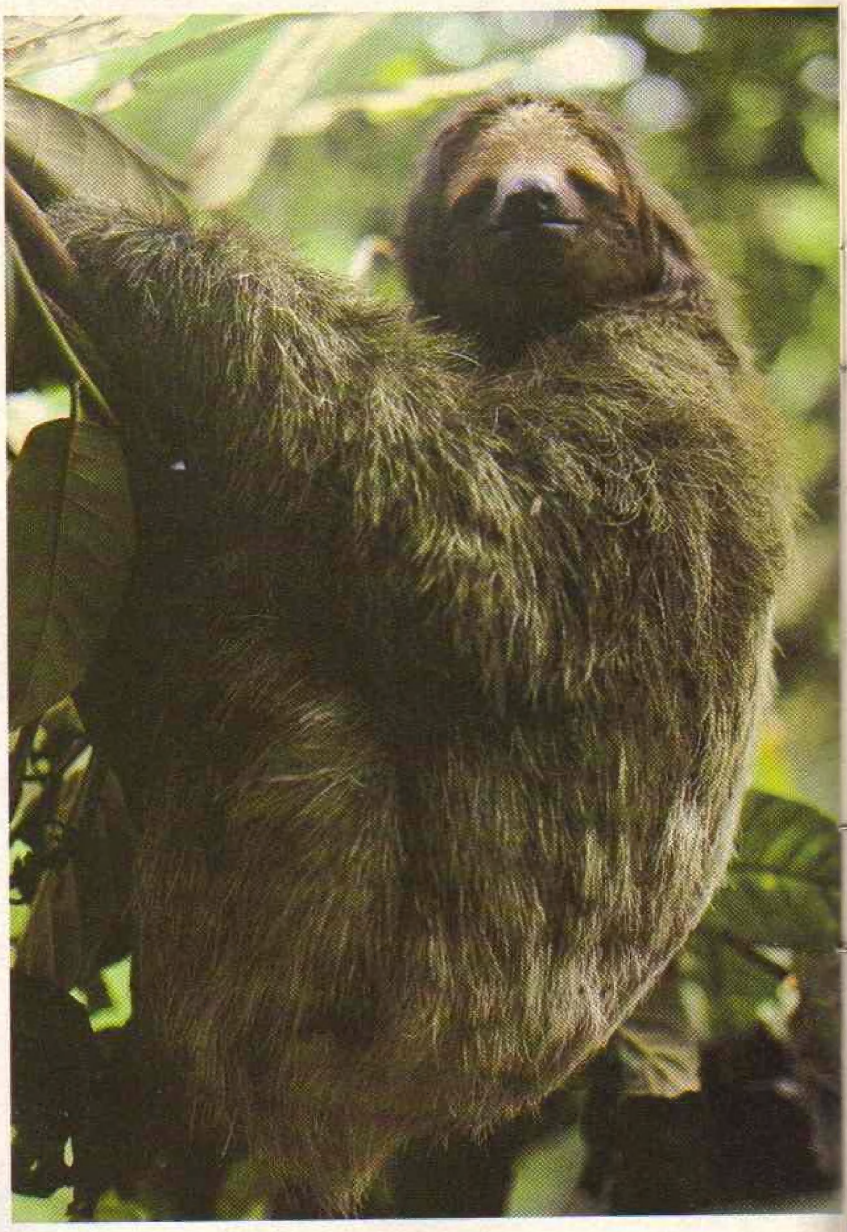
Don Perry doesn't stay in the trees all the time. "Usually at night, I climb down to the ground and sleep in a nearby research station with other scientists," he says. But he does spend a good part of each day up in his web. Sometimes he sleeps on a four-foot by eight-foot platform nestled among the branches.

The platform helps Dr. Perry study how insects pollinate flowers. "Usually I'll rise before dawn and before the flowers on the trees begin to open. I leave my platform and go out on the web, hang down, and see what stage of pollination the insects are in.

"The flowers open in the morning and close by noon. A flower doesn't last for more than a few hours, so I have to work fast!"

What does he do with the information he gets as he hangs in mid-air? Don records which flowers open and the types of insects that visit the flower to pollinate it. He also collects samples of the insects and the flowers. From these samples, he writes his scientific papers.

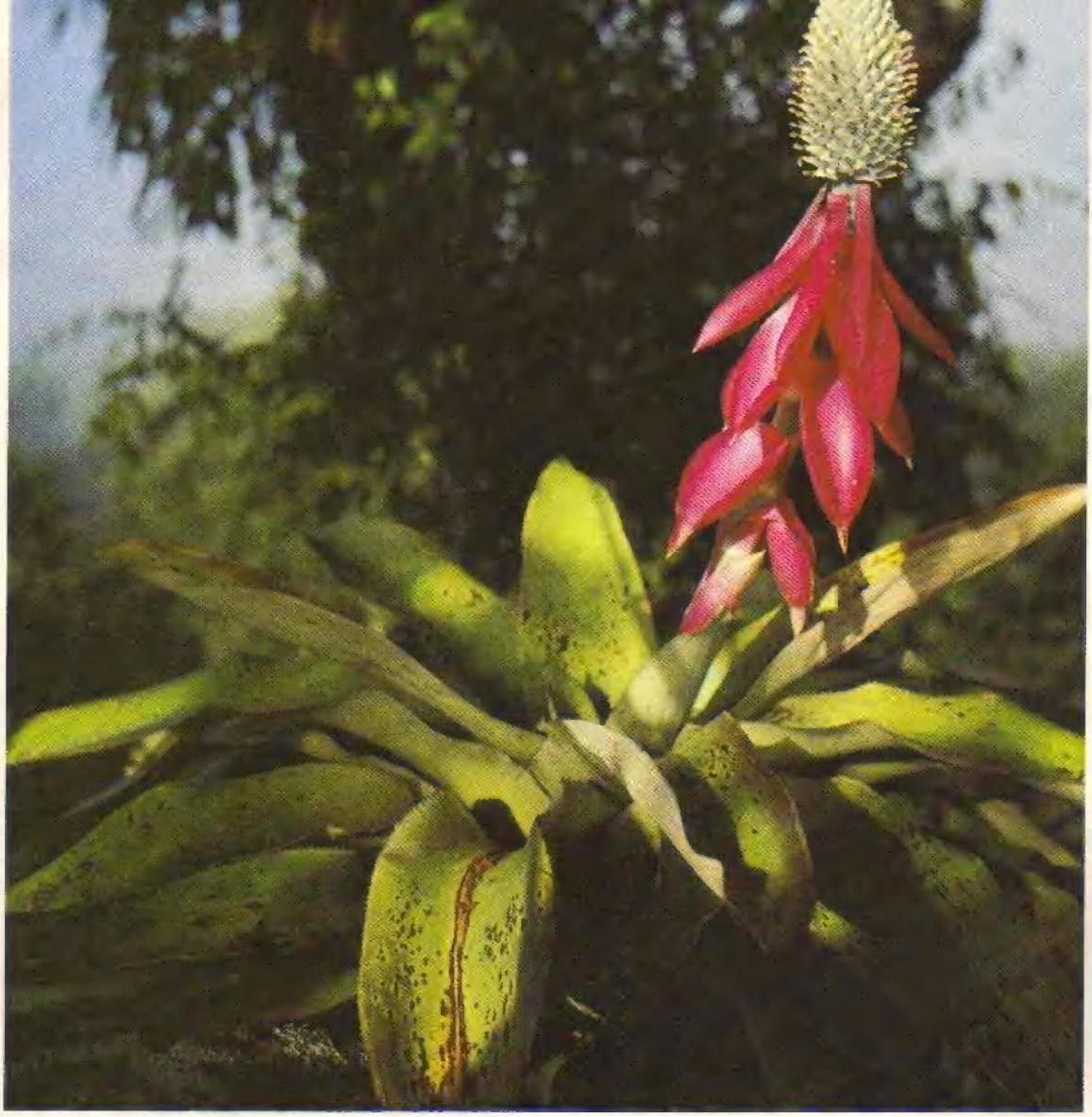
An important piece of scientific equipment is Donald Perry's camera. "I take photos of anything I see. Photographs are important since the rain forests are disappearing.



Above: The three-toed sloth can hang in a tree for hours, feeding on leaves, buds and tender twigs. Its fur is covered with greenish algae and moths.

Left: What's for dinner? This anole lizard is eating a praying mantis. Lizards grow to be seven inches long.

Right: The damsel fly can see moving objects 18 feet away. The insect can fly as fast as 50 miles an hour.



Left: This colorful plant may be new to science. It grows 130 feet above the ground. The plant lives off the water it stores in its base—like a reservoir.

PHOTOS © DONALD R. PERRY

Photos are records of life in the canopy."

Donald Perry's photos have another purpose, too, "They help me make the work I'm doing understandable to people. And when people understand what's going on, they may try to help save the rain forest. That would be great, since many scientists think the forest can yield new sources of food and medicine," he says.

"As a kid I was interested in adventure. *Robinson Crusoe*, the man who was stranded on an island, was one of my favorite books. And I've always loved animals—especially lizards and snakes. As a child in Arizona, I would go into the desert and chase them. Imagine my surprise to learn that these animals also lived in the treetops of rain forests!"

Today, a grown-up Donald Perry is still chasing lizards and snakes. In doing so, he is recording a fascinating and precious world that is on the edge of vanishing forever.

Any Questions?

ILLUSTRATIONS © JOHN NEZ

How do plants breathe? You breathe because your body needs elements from the air. Plants need things from the air, too, but they don't breathe the way you do.

Air enters plants through small holes in their leaves. Just like people, plants take only the things from the air that they need. Your body takes oxygen out of the air you breathe. In the daytime, plants take out carbon dioxide. When the sun shines on their leaves, it provides energy to turn carbon dioxide and water into the sugar plants use for food. This process is called *photosynthesis*. Oxygen that the plants can't use is left over. This is released into the air.

Most of the oxygen in the air is put there by plants. You could say that plants "breathe" in carbon dioxide and "breathe" out oxygen. People breathe in oxygen and breathe out carbon dioxide. Now, that's a pretty convenient air-rangement!

Question sent in by Amy Browning, Indianapolis, IN.

Why do people sleepwalk? Sleepwalking happens when a person is in a very deep sleep. Sleepwalkers have been known to open doors, go down stairs—even walk outside their houses!

No one knows exactly why people sleepwalk. Experts think it may be caused by a temporary problem in a person's nervous system. The brain is sending messages to parts of the body, but the signals aren't getting through clearly. When a person goes into a deep sleep, these signals may make him sit up or go for a walk.

Kids sleepwalk a lot more often than adults do. As many as one out of every 10 kids may have had a sleepwalking experience. But most kids stop sleepwalking by age 14. Experts say their nervous systems have just outgrown these temporary problems.

You won't hurt a sleepwalker if you wake him up. But you will surprise him. Sleepwalkers aren't dreaming of taking a walk. They don't have *any* idea that they're not in bed!

Question sent in by Brenda Thompson, Peabody, MA.

CREATE A FAMILY LEARNING CENTER WITH A COLOR COMPUTER 2

Connect your television to a Color Computer 2 from Radio Shack to make a family learning center in your home. Then watch what happens: Your set will be on more and more, but your family will be watching fewer TV shows.

A Valuable Education at Home. Our Color Computer 2 and educational software from Walt Disney and Sesame Street make a tempting alternative to television for children age 3 and up. You'll enjoy knowing that you've provided the first step in a computer education for your children and that the Color Computer 2 can handle your home computing needs, too! In fact, the learning center could become the busiest spot in your home, as you and your children enjoy programming and home computing together.

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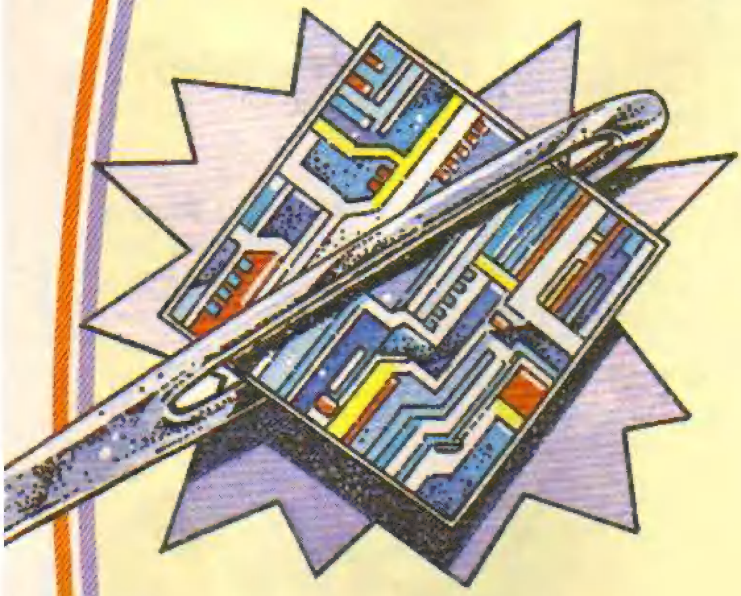
Factoids

A computer microchip is so small it can fit through the eye of a needle.



The ears of a grasshopper are located in its stomach.

The African lion is often called the "king of the jungle." But it really lives on grassy plains and in the open bush.

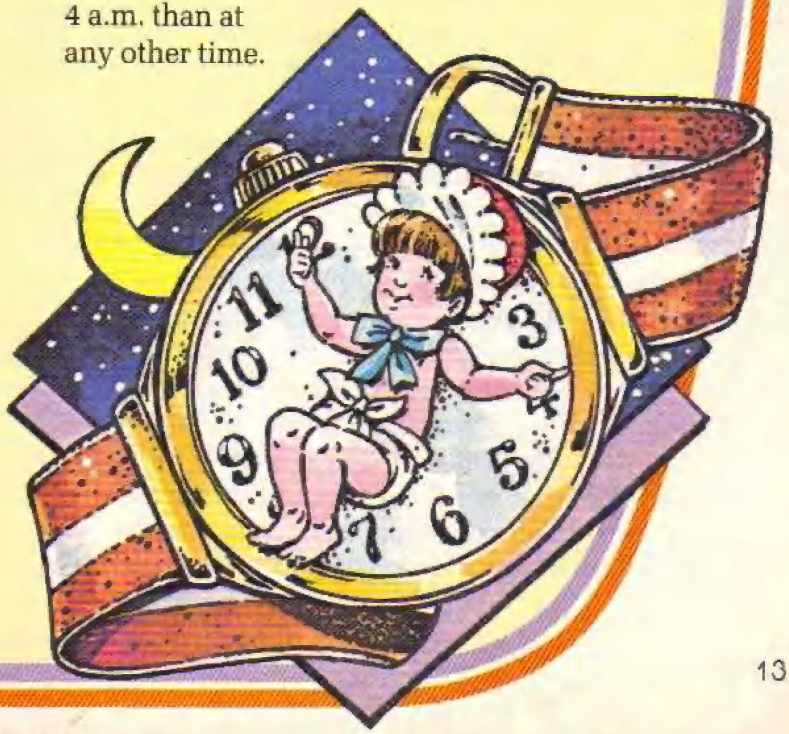
ILLUSTRATIONS © JOHN NEZ

Your heart beats
more than 100,000 times
in 24 hours.

The hamburger was first
introduced at the St. Louis (Missouri)
World's Fair in 1909.

Honeybees travel
about 55,000 miles to
make one pound of honey.

More babies
are born around
4 a.m. than at
any other time.



SNEAK PREVI

by Elizabeth Hettich

Olympic marathon winner Joan Benoit couldn't run a race without them. They help top track star Carl Lewis jump farther. New York Knicks basketball player Bill Cartwright uses them to leap up towards the basket and score big points. And chances are, you've got these handy helpers yourself.

What are they? Sneakers! Last year, some 130 million pairs of sneakers were sold in the U.S. And for good reason.

"Sneakers really help me in running and jumping," Carl Lewis told 3-2-1 CONTACT. "They're pretty basic to doing well in sports."

According to one person anyway, sneakers are pretty basic to doing well in other things, too!

"It may sound dumb, but I swear I do better in school when I'm wearing my sneakers," says Lisa Salva, 11, of San Francisco, California. "It's like I can think better with them on. I guess it's just that I'm more comfortable and probably more relaxed in them than in any other kind of shoe. So it's easier for me to think!" she adds.

Carl Lewis might understand Lisa's feelings about her sneakers. He says, "I have lots of different pairs of sneakers. One pair for working out, one for sprints, one for weightlifting. I like my sneakers to be colorful. Any colors. If I have a choice between a white pair or orange ones, you can bet I'll choose the orange ones!

"I have all my sneakers lined up in my room. Once on my way to a meet, I grabbed a pair without looking at them. It turned out that I'd grabbed two right shoes. So I had to find someone with roughly the same shoe size as me. For the entire meet we had to trade off!" Carl Lewis won the meet—thanks to someone else's sneakers!

Last summer Joan Benoit won the gold medal at the Olympic Games. Benoit's sport: the long and hard 26-mile, 385-yard marathon race. Joan Benoit told CONTACT that she couldn't have

PHOTO © STAN FELLERMAN, INGRID WEBBER, STYLIST

FEW AN INSIDE LOOK AT SNEAKERS

JOAN BENOIT

PHOTO © DUOMO/DAVID MADISON

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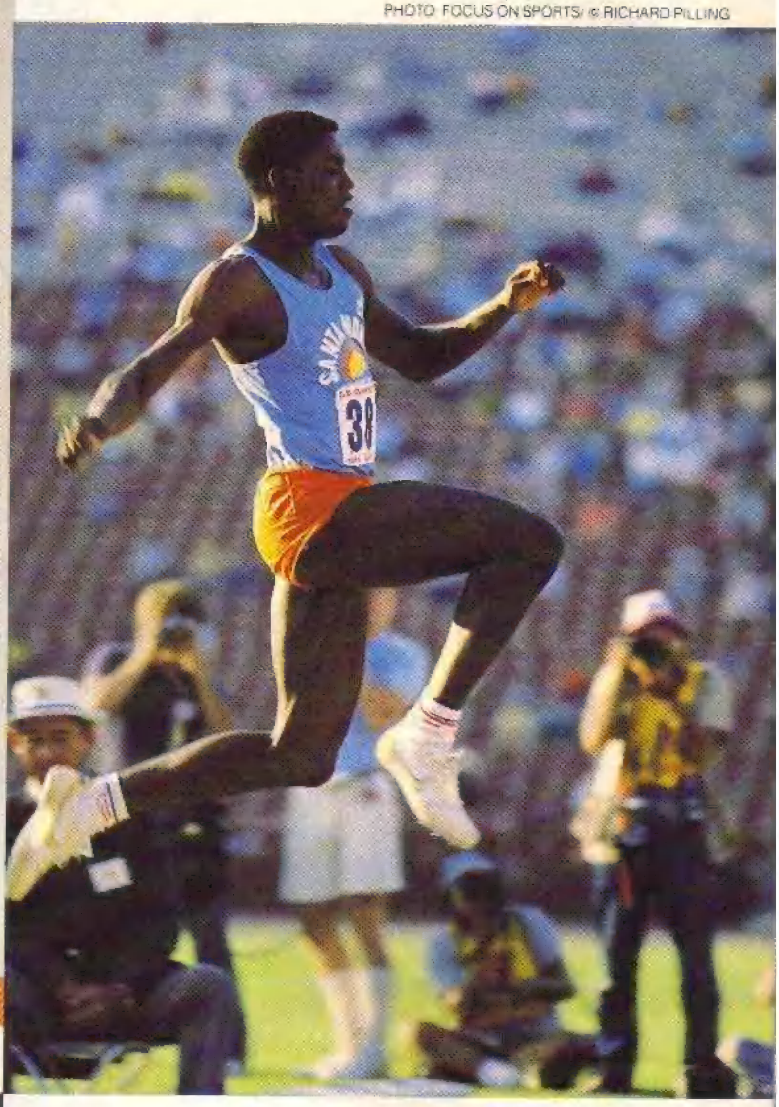


CARL LEWIS

won without her running shoes—they gave her the support she needed.

Is there anything special that she does with her sneakers before running? "I really never learned to tie my shoes correctly," she laughed. "I make two loops—'bunny ears'—and then tie them into a double knot. I also have good luck sneakers—the ones I ran the Olympic marathon in. I'll never throw them out!"

Basketball star Bill Cartwright has been wearing high tops ever since he can remember. "My high tops are white with blue stripes. Those are the Knicks ➤➤

colors—good thing too because blue is my favorite color.

"I like my sneakers," Bill says. "If I play two or three good games in a pair, you can be sure I'll wear the same ones the next time I play. And if I'm wearing a new pair and the game goes badly, you can be sure I won't be wearing them again!" says the man with a size 17 foot.

The First Sneakers

Whether you wear a size 5 or 17 sneaker, there's no doubt that sneakers have changed since the 1890s when a pair of white canvas sneaks cost one dollar. Back then, both sneakers in a pair were identical—you had to decide which one was for the right foot and which was for the left! It took some painful breaking in to get those sneakers to mold to your feet!

Not so today. There are different types of sneakers for running, basketball and tennis. Some sneakers have patterns and designs on their soles. Others have flat, smooth soles. One thing is certain: there is a sneaker for everyone.

"Sneakers have come a long way," notes Carl Lewis. "They never used to fit this well. Believe me, I know. I've gone through so many pairs!"

If the Sneaker Fits...

Unlike the old-fashioned styles, today's sneakers can be good for your feet. "Sneakers have to fit and give your feet the right support and cushioning," notes Dr. Barry Block, a New York City foot doctor.

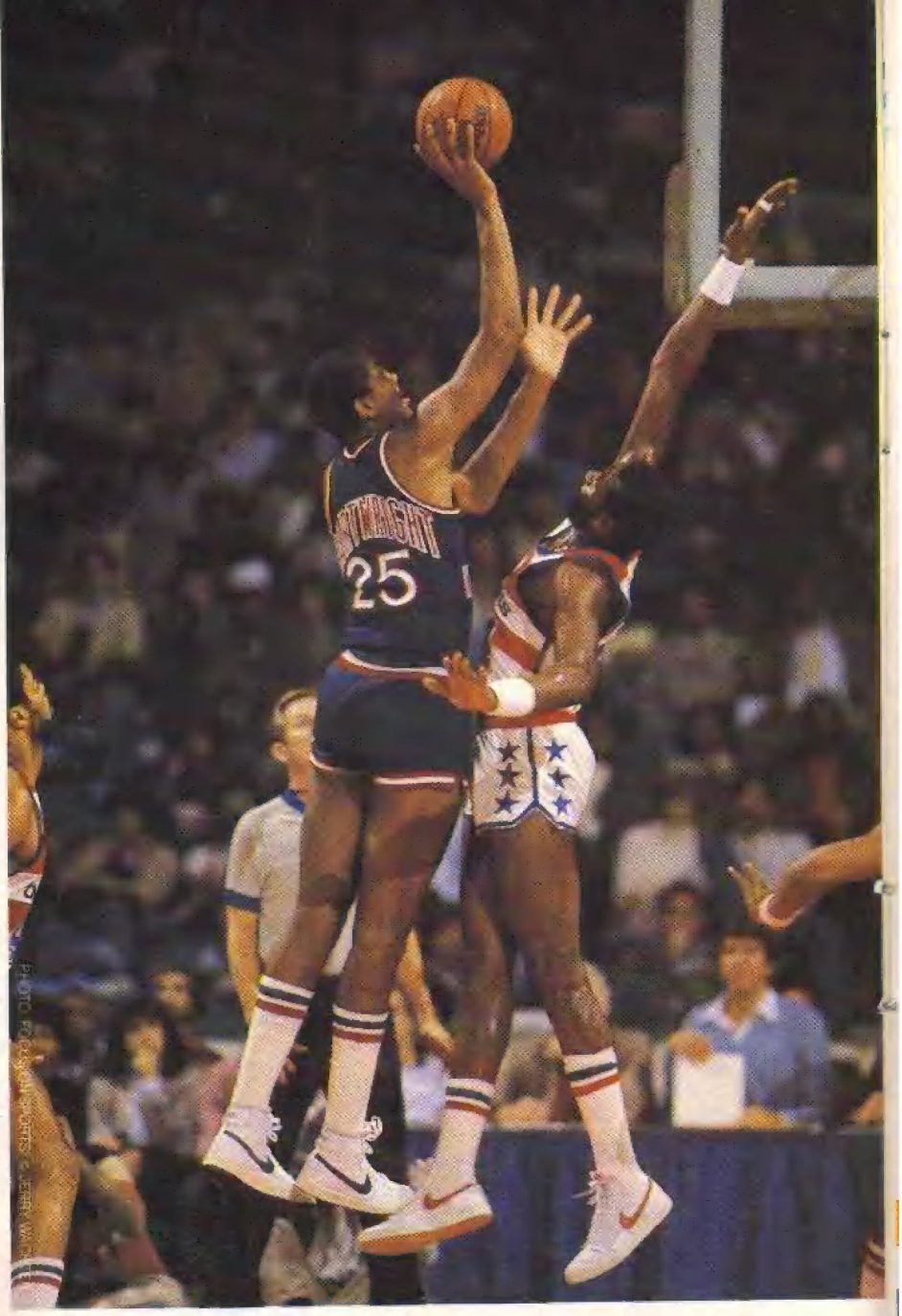
"If you buy a poorly made pair, you're likely to have foot problems which could also affect your ankles, knees and back."

The number one thing to look for in a sneaker is fit. "A sneaker should be comfortable and roomy," explains Peter Stipe, an official with Nike sneakers. "There should be about a half inch to an inch of room at the toe, and when you lace the shoe up, there should be about an inch between opposite eyelets."

Linda Widegren of New Balance sneakers adds, "Don't ever buy a pair of sneakers and expect them to loosen up." Sneakers should be flexible—they shouldn't be too stiff. It's important to have your foot move with you while you run and jump.

The worst mistake is wearing a pair that is too small, especially while your feet are growing. Poorly-fitting sneakers could damage the 26 bones in your feet!

Look for a shoe that provides lots of cushioning to absorb the impact when



Above: Bill Cartwright often wears a "good luck" pair of sneakers when he plays ball.

your foot hits the ground. And look for a sneaker that gives you good support. For instance, high tops, which are very popular these days, do give plenty of support to the ankles.

"The best time to go shopping for sneakers is late in the day," explains Dr. Block. "That's because your feet swell during the day. If you buy shoes in the morning, they may be too small by afternoon."

What to Look For

What should your sneakers be made of? "Soft leather is a favorite these days. It tends to last longer than nylon or canvas," explains Peter Stipe of Nike. "Leather is a little heavier though. And it is a bit more expensive."

If you want a lightweight shoe, nylon is your best bet. Nylon also dries quicker and "breathes" more than leather. That means air can move around your foot more easily and sweat can evaporate. That's important since your feet give off about one cup of fluid each day.

Sometimes it's not the sneaker but the way they're worn that's no good for your feet. Take the current style of loosely threading shoelaces from one side of the sneaker to the other without tying them at the top.

"It may be the style this year but you're bound to twist your ankle and find your leg in a cast," warns Dr. Block. ➳

Below: At night, headlights from cars reflect off this sneaker's sides and heel. The feature means increased visibility—and safety—for walkers and runners.

PHOTO COURTESY OF NIKE DESIGN

Left: Exercise shoes and sneakers come in hot colors and designs.

PHOTO COURTESY OF REEBOK SHOES

Sneaker Testing

Before a company sells a new sneaker, it tests it on the people who are the roughest on their sneakers: professional athletes.

"We give athletes—like the tennis player Virginia Wade or basketball player James Worthy—our newest styles and have them try them out for a couple of months," says Linda Widegren of New Balance. "Then they send them back to us."

When the used sneakers arrive back at the factory, workers check to see where the sneaker has worn out. This information is analyzed by a computer. The information gives researchers details about where the major wear and tear occurs. The company can then make those parts of the sneakers a little tougher.

Sometimes computers help out by monitoring the performance of athletes while they're actually wearing the sneakers. Every time an athlete runs, jumps, turns or just moves, the computer records the information.

Sneaker Tips

When you finally do find a pair of sneakers that look right and feel good, there are a few things you can do to make them last a little longer. Sneaker dealers suggest that you unlace your sneakers before taking them off. Otherwise you might destroy the sneaker in no time.

If your sneakers get dirty, wash them. But do it carefully, using cold water and a mild detergent or soap. When your sneakers get wet, the quickest way to make them fall apart is by putting them near a radiator or fire to dry. That's because sneakers are made with heat-sensitive glue. Instead, stuff your sneakers with paper and let them dry at room temperature.

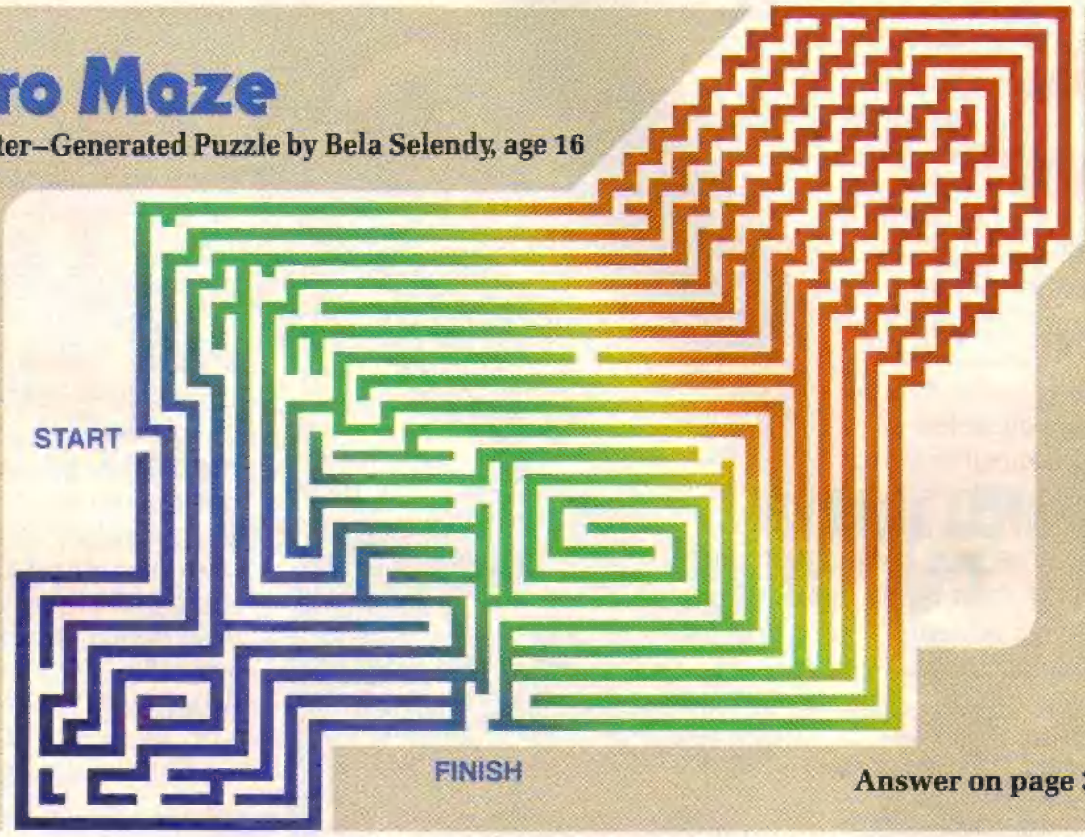
"Sneakers are supposed to feel good and be fun to wear," says Andy Hawkins from Nike. But watch out! Once you put them on, you may never want to take them off!

ENTER®

THE HIGH-TECH WORLD OF COMPUTERS

Micro Maze

A Computer–Generated Puzzle by Bela Selendy, age 16



Answer on page 39.

Challenge #15 It's A-maze-ing

One of ENTER's regular features is the programming Challenge. To meet the challenge you must come up with a computer program. Each Challenge has a different theme.

This month, we want you to write a program that draws mazes. It can be a program that draws just one maze or a program that draws a different maze every time. It can be a program that draws a maze on your TV screen and then solves it for you. Or one that helps you design mazes and prints them.

In order to win the challenge, you must send us a maze that was created with your program. (We also want to see the program, of course.)

To give you an example, we've printed a computer-drawn maze above. It was created by Bela Selendy, 16, on an Apple IIe.

When you've got a truly amazing program, send it to **Challenge #15, 3-2-1 CONTACT, 1 Lincoln Plaza, New York, NY 10023.** We'll pick the best ones and print them in BASIC Training. The winners will receive $25 and an ENTER T-shirt.

All entries must be your original work. Tell us your name, age, T-shirt size, the computer the program was written for, and a short description of what the program does. Entries must be postmarked by July 1.

If you've written any other programs you'd like us to print, send them to BASIC Training at the above address. We pay between $25 and $50 for programs we print.

Note to ENTER Readers

The winner of Challenge #12, "Hobby Helper," will appear in next month's BASIC Training.

Newsbeat

Edited by Jessica Wolfe

This month Newsbeat takes you to outer space. Then go behind-the-scenes for the latest and hottest high-tech news.

More Space For a taste of outer space, go to Alabama! That's where you'll find the U.S. Space Camp at the Space and Rocket Center in Huntsville, Alabama. This special camp offers a "hands-on" voyage into the world of space flight and high technology. Campers will get to experience a "rocket launch" and co-pilot a "Space Shuttle mission." You'll even get lessons on rocketry, robotics and astronaut training.

To find out what it's like to be a real astronaut, you must have finished 6th, 7th or 8th grade. A week-long session costs $350. Applications must include your science teacher's recommendation. For more information write to:

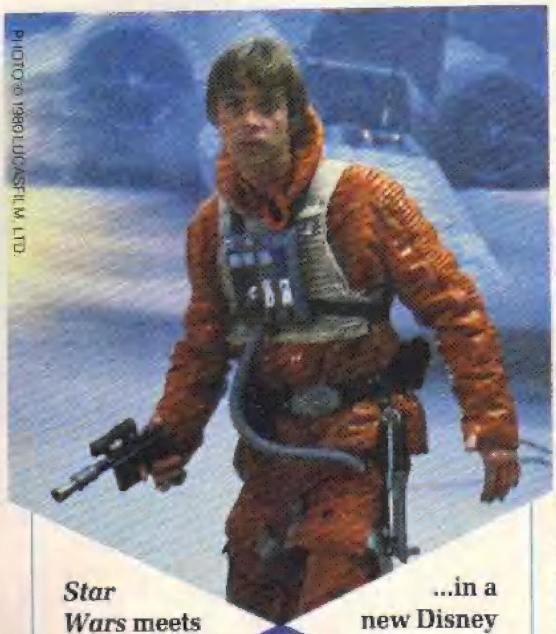
United States Space Camp
Alabama Space & Rocket Center
Tranquility Base
Huntsville, AL 35807

Or call toll-free: **1-800-633-7280**

Class Act School doesn't have to leave you in a daze, especially when you're learning about computers. We want to tell the world about your computer class or club. Tell us about the special computer projects you and your friends are working on. If we print your story, we'll send you a T-shirt. Write to:

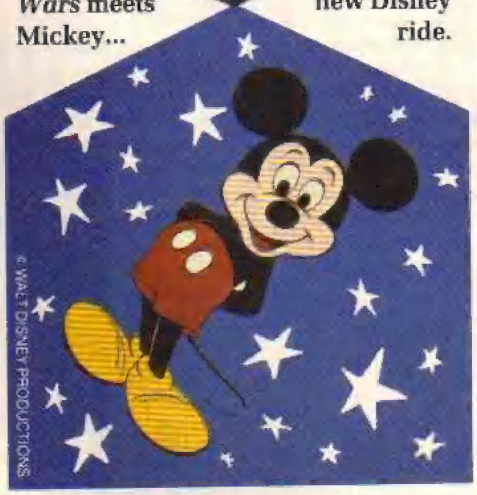
Class Act, ENTER
1 Lincoln Plaza,
New York, NY 10023

Don't forget to include your name, address, phone number and, of course, your T-shirt size.



Star Wars meets Mickey...

...in a new Disney ride.



No Biz Like Show Biz

● Disneyland is about to enter warp speed. *Star Wars* creator George Lucas is designing a *Star Wars* attraction for the California park's Tomorrowland section. The project is very "hush-hush" right now, but we know the new attraction is scheduled to open in June 1986. Darth Vader better beware. A Disney official reports that the new Lucas creation will use "technology never before seen in a theme park."

● What looks like a guitar, sounds like a synthesizer, yet has no keyboard? It's the *Synthaxe*, a new computer-controlled instrument designed by a musician, a studio engineer and a computer expert. How does this new instrument sound to top music stars? Great, it seems. Andy Summers of the *Police*, as well as Peter Frampton and Ian Anderson, are all set to make the Synthaxe sing when the first models are ready in October.

Young Astronauts Want to blast off without leaving home? Explore the Young Astronaut Program. This national program is aimed at students, youth groups and community organizations. Once you set up a Young Astronaut chapter, you'll stay on top of the latest developments in space technology.

Each Young Astronaut chapter will receive:

● Space science materials, including a newsletter that tells about upcoming space launches and the activities of other Young Astronaut chapters.

● Use of a coast-to-coast computer data bank with programs, projects and information about space.

● Contests with out-of-this-world prizes, such as trips to Kennedy Space Center to watch a space shuttle launch.

The Young Astronaut Program has a $20-a-year membership fee. If you want more information on how to start a group, write to:

Young Astronaut Council,
1015 15th Street, NW
Suite 905
Washington, D.C. 20005

ask enter

by David Powell

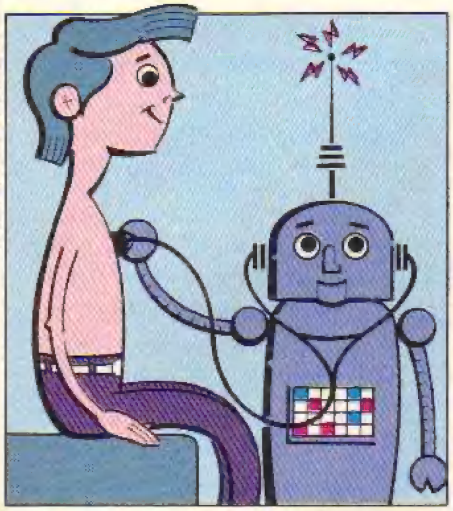


ILLUSTRATION © PHIL ANDERSON

Is There a Robot in the House?

Dear Enter, Will there ever be robot surgeons? How do robots and computers help surgeons now?

Darnell Fenno, La Junta, Colorado

Dear Darnell, Although there's no robot that performs surgery right now, there are computers and robots that are helping out in the operating room.

In Buffalo, New York, a computerized map of a patient's brain tumor is shown on a screen. Then a surgeon uses the map to plan the operation. Finally, a computer uses this information to guide a laser beam to the location of the tumor.

In St. Louis, Missouri, a special graphics system creates plastic models of birth defects. Surgeons use the models to help plan operations.

In the future you can expect to see more examples of robots and computers helping with operations. But you'll probably never see computers given complete control over surgery.

Buses—Computer Transit?

Dear Enter, What is a "bus" in a computer?

Sara and Katie Goodall, Clearwater, Florida

Dear Sara and Katie, A bus in a computer is a kind of electrical pathway. In fact, it's really more like a high-speed freeway than the bus you may take to school.

Electrical signals travel along the bus to and from RAM (your computer's memory) and the processor (where the actual computing takes place). There are also exit and entrance "ramps" that connect to input and output devices. These can include your television, a disk drive and your keyboard.

Ask Us!

If you have questions about computers, write to:

ASK ENTER, CTW,
1 Lincoln Plaza,
New York, New York 10023

HOW TO BLOW UP A RUBBER RAFT

First, you need a reason to use a rubber raft. (That's a snap if you've got ZORK® I, the classic fantasy story from Infocom's interactive fiction line. Because you'll be hunting twenty fabulous treasures while dodging every kind of evil under the earth.)

Next, type in your command: BLOW UP THE RUBBER RAFT WITH THE AIR PUMP... But watch it, or you might just blow up the raft until you blow yourself to smithereens!

There's no telling what will happen next in ZORK I—because, like all of Infocom's interactive fiction, ZORK's designed so that whatever *you* choose to do makes the next thing happen. And you won't run out of things to do, either. The underground empire of ZORK is so huge, your adventure can last for weeks or even months.

So if you want the closest thing on a disk to really exploring an underground world, get ZORK I*. But brace yourself for the action—it'll blow you away!

INFOCOM™

*It's compatible with almost every popular home computer. ZORK is a registered trademark of Infocom, Inc.

reviews

by Hilde Weisert

Mr. Pixel's Cartoon Kit

Mindscape; Commodore 64, Apple II computers; $34.95

Suffering Succotash! Creating computer cartoons sure would be fun. But with some animation software, you have to learn a lot of rules before you can begin.

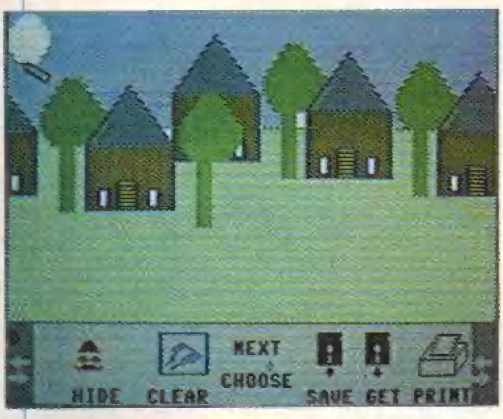
That's not true with *Mr. Pixel's Cartoon Kit*. With this software you can create, change and save three-character cartoons and almost never look at the users manual. You cannot add words or sounds to the on-screen action.

How does it work? Well, when you load the program into your computer, a cartoon comes on the screen. The cartoon features three characters. You use your joystick to select which character you want to control. Then, by moving the joystick around, you can direct the character to move up or down or in any other direction. You do this for all three characters, then let them act out the scene you created. There's even a small screen in the

corner that lets you preview your animation as you go along.

Creating any computer cartoon can be tricky at first. But this software makes it easy. You'll have fun improving your control of the characters. Plus, you will learn about programming along the way.

Mr. Pixel's Cartoon Kit gives you a choice of 28 different characters, including a hungry shark and a kicking ape. Our only complaint is that the graphics are kind of "blocky," and not as sharp as in some animation programs.



Mr. Pixel's Programming Paint Set

Mindscape; Commodore, Apple II computers; $34.95

Mr. Pixel's Programming Paint Set is another easy-to-use program. It lets you create new background screens for *Mr. Pixel's Cartoon Kit*, or doodle any kind of screen art. And, everything you need to know is made perfectly clear right on the computer screen.

If you're an old pro at Logo or another computer language that lets you create shapes, this is not a very exciting program. But if you're just getting started, you can have a lot of fun with *Mr. Pixel's Programming Paint Set*.

Operation Frog

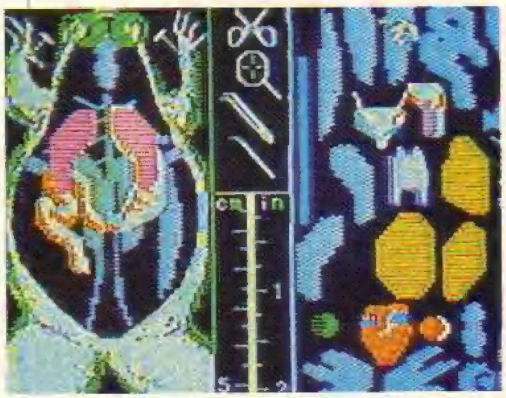
Scholastic; IBM PC and PC*jr*, Apple II computers; $39.95/ Commodore 64; $29.95

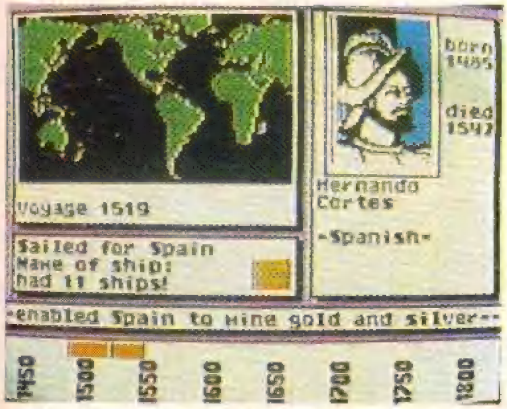
Frogs have a friend. For years, the poor frog has given its life so biology students could learn what's inside the little critter. Now you can learn without the mess and fuss of dissecting a real frog. *Operation: Frog* software is painless to the frog *and* to the computer user.

The main screen of this software shows a picture of a frog on a lab table. The tools to take the frog apart are off to the side of the screen. You can either dissect the frog or put it back together. The process is like a 3-D jigsaw puzzle.

Our favorite feature was the magnifying glass, which lets you take a close up look at your full-color computer-generated frog. There's also a "reconstruct game" that lets you compete with a friend to see who can put the frog back together fastest. If you've done the job right, the frog does a little dance when the reconstruction is complete.

Operation: Frog probably won't replace biology class, but it is a great way to learn about frogs and anatomy from the inside out.





Sea Voyagers

CBS Software; Commodore 64, IBM PC and PC*jr* and Apple II computers; $39.95

Ahoy! Does your mind drift out to sea when the teacher starts talking about great explorers? Are you awash in an ocean of names and dates? Do you have trouble telling DeSoto from daGama?

Well then, welcome aboard *Sea Voyagers*. This software from CBS features three games and a built-in database to help you learn all about the world of New World explorers.

The opening menu lets you choose a game or find out about an explorer. It also tells you almost everything you'll need to know to make use of this software.

To call up data about any explorer from Covilha in 1486 to Cook in 1776, simply touch one key. A plastic overlay that fits over the computer keyboard makes it very easy to find the right key. For instance, if you press the key marked Henry Hudson, you'll see this explorer's picture and watch an animated map chart his voyage. Hit the "sound off" key and the computer will play his country's national anthem while important facts scroll across the screen.

When you've checked out a few of these explorers, it's time to play one of *Sea Voyager*'s games. My favorite was "Explorer Match." In this game, you are given the names of five explorers. You put together the ones whose countries or centuries or territories match. Whoever finds the most combinations wins.

I also liked the short history of exploration in the user's manual. This fun-to-read guide takes you from the first voyages by the Vikings to more recent discoveries made by explorers to the Antarctic. There's even a list of books about great explorers. That's in case you want more information on Magellan or data about deSoto.

I have only one complaint. I wish this software would let you, the computer user, explore more. It would be fun to see how different voyage maps fit together or to watch how a world map changes over the centuries. But even so, *Sea Voyagers* is a great way to learn about explorers—and to stay afloat in a sea of information.

HOW TO PUT A PLATYPUS UNDER YOUR SPELL

No one loves getting wet more than a duck-billed platypus. (That's pronounced 'plat-i-pus.) So if you want to make a platypus happy in WISHBRINGER,™ Infocom's amazing interactive magic adventure, just type in a magic spell: PICK UP THE MAGIC ROCK AND THE UMBRELLA. OPEN THE UMBRELLA, THEN WISH FOR RAIN.

You'll be glad to have a happy platypus on your side. WISHBRINGER's packed with danger. You'll face sorcerers, kidnappers, even a stone that grants its owner's every wish. In fact, there's so much action, your adventure can last for weeks or even months.

Get the closest thing on a disk to real magic. Get WISHBRINGER.* It's a great adventure—and a great way to learn how to spell platypuses.

INFOCOM™

*It's compatible with almost every popular home computer. WISHBRINGER is a trademark of Infocom, Inc.

basic training

PROGRAMS FOR YOUR COMPUTER

You don't have to own a football helmet to play this adventure game, but it might help. The object of the game is to escape from an underground cavern before you get too many bumps on your head. Sound strange? There's more.

The only way out of the cavern is to find the magical escape potion. You can move from room to room by typing in N for north, E for east, S for south and W for west. As you travel, make a map of the rooms you visit. Make sure you write down everything you see. If you find an object you want (like the potion) type the letter G (for get).

By collecting the right combination of objects, you'll be able to get the potion. But watch your step!!! If you trip and bump your head, you might get a little mixed-up. In fact, you might start bumping into the walls!

What's the secret? Here's a hint: look at subroutine 990. That's where the program takes your input and sets variable D for your direction. Notice anything?

The program is written for Apple and Adam computers. To make it work for other home computers, follow these directions.

Atari Change all HOME statements to PRINT CHR$ (127) Delete lines 900 and 960.

Change line 1000 to: 1000 INPUT K$

Note The user will have to press return after typing a letter.

Commodore, VIC-20 Change all HOME statements to PRINT CHR$ (147) Delete lines 900 and 960.

IBM, TRS-80 Change all HOME statements to CLS

Delete lines 900 and 960. Change line 1000 to: 1000 K$ = INKEY$

Timex-Sinclair Change all HOME statements to CLS. Delete lines 900 and 960. Change line 1000 to 1000 K$ = INKEY$

Break up all multiple statement lines. Change all IF statements to Timex-Sinclair syntax.

TI 99/4A Change all HOME statements to CALL CLEAR Delete lines 900 and 960.

Change line 1000 to: 1000 INPUT K$

Note The user will have to press return after typing a letter. If you don't have Extended BASIC, break up all multiple statement lines.

```
10   REM OUCH!
20   W = 0: DIM K$(1)
30   HOME
40   PRINT "YOU ARE IN A DARK
     SLIMY CAVE"
50   PRINT "YOU MUST FIND
     THE MAGIC POTION"
60   PRINT "TO ESCAPE..."
70   PRINT "TUNNELS LEAD
     NORTH AND EAST"
80   GOSUB 1160
90   GOSUB 990
100  ON D GOTO 430,280,110,110
110  GOSUB 1250
120  GOTO 90
130  HOME
140  PRINT "THIS AREA HAS
     CRUMBS ON THE FLOOR"
150  PRINT "IT SEEMS TO BE
     USED FOR DINING"
160  PRINT "VARIOUS EATING
     UTENSILS ARE AROUND"
170  IF B < > 0 THEN 190
180  PRINT "INCLUDING A
     LARGE WOODEN BOWL"
190  PRINT "THE ONLY EXIT IS
     TO THE WEST"
200  GOSUB 1160
210  PRINT
220  GOSUB 990
230  IF INV < > 1 THEN 250
240  B = 1: GOTO 130
250  ON D GOTO 260,260,260,430
260  GOSUB 1250
270  GOTO 220
280  HOME
290  PRINT "YOU ARE IN WHAT
     SEEMS TO HAVE BEEN"
300  PRINT "A WORKSHOP"
310  PRINT "THERE ARE
     VARIOUS TOOLS HERE"
320  IF K < > 0 THEN 340
330  PRINT "INCLUDING A
     BRIGHT BRASS KEY"
340  PRINT "THE DOOR YOU
     ENTERED IS WEDGED SHUT."
350  PRINT "THE ONLY EXIT IS
     TO THE EAST"
360  GOSUB 1160
370  GOSUB 990
380  IF INV < > 1 THEN 400
390  K = 1: GOTO 280
400  ON D GOTO 410,670,410,410
410  GOSUB 1250
420  GOTO 370
430  HOME
440  PRINT "YOU ARE IN AN
     ANCIENT MUSEUM"
450  PRINT "TORCHES CAST A
     BRIGHT FLICKERING LIGHT"
460  PRINT "THERE ARE MANY
     DISPLAY CASES HERE"
470  IF G < > 0 THEN 490
480  PRINT "IN ONE YOU SEE A
     LARGE BEAUTIFUL GEM"
490  PRINT "PATHS LEAD SOUTH
     AND EAST"
500  GOSUB 1160
510  GOSUB 990
```

```
520  IN INV = 0 THEN 640
530  IF K = 1 THEN 560
540  PRINT "YOU CAN'T OPEN
     THE CASE WITHOUT A KEY"
550  GOTO 620
560  PRINT "YOU USE THE KEY
     TO OPEN THE CASE"
570  IF B = 1 THEN 600
580  PRINT "YOU CAN'T PICK UP
     THE GEM WITHOUT A
     MAGIC BOWL"
590  GOTO 620
600  PRINT "YOU SEE THE BOWL
     TO PICK UP THE GEM"
610  G = 1
620  FOR N = 1 TO 2000: NEXT N
630  GOTO 510
640  ON D GOTO 650,130,30,650
650  GOSUB 1250
660  GOTO 510
670  HOME
680  X = X + 1:W = W + 1
690  PRINT "YOU TRIP OVER A
     SMALL STONE"
700  PRINT "HIDDEN IN THE
     SHADOWS"
710  PRINT "YOU FEEL A LITTLE
     DIZZY FROM A BUMP"
720  PRINT "ON YOUR HEAD"
730  PRINT "EVERYTHING
     SEEMS TURNED AROUND"
740  PRINT "IN A DAZE, YOU
     FOLLOW THE PATH AS IT
     TWISTS AND TURNS"
750  PRINT "FINALLY YOU SEE A
     SMALL UGLY TROLL"
760  PRINT "WEARING AN
     ENTER T-SHIRT"
770  PRINT
780  PRINT "HE HAS A BOTTLE
     OF MAGIC POTION"
790  PRINT "SENSING YOUR
     PLIGHT HE OFFERS TO SELL
     IT TO YOU"
800  GOSUB 990
810  IF INV = 0 THEN 840
820  IF G = 1 THEN 870
830  PRINT "UNFORTUNATELY
     YOU HAVE NOTHING OF
     VALUE"
840  PRINT "YOU CONTINUE TO
     WANDER IN CIRCLES UNTIL..."
850  FOR N = 1 TO 2000: NEXT N
860  GOTO 30
870  HOME
880  PRINT "EAGERLY YOU
     DRINK THE POTION..."
890  FOR N = 1 TO 500: NEXT N
900  FLASH
910  PRINT
920  PRINT "POOF"
930  FOR N = 1 TO 500: NEXT
940  HOME
950  FOR N = 1 TO 500: NEXT
960  NORMAL
970  PRINT "YOU FIND
     YOURSELF SAFE AND
     SOUND!"
980  END
990  D = 0:INV = 0
1000 GET K$
1010 IF K$ = "N" THEN 1090
1020 IF K$ = "S" THEN 1060
1030 IF K$ = "E" THEN 1070
1040 IF K$ = "W" THEN 1080
1050 GOTO 1100
1060 D = 3: GOTO 1100
1070 D = 2: GOTO 1100
1080 D = 4: GOTO 1100
1090 D = 1
1100 D = D + X
1110 IF D < = 4 THEN 1130
1120 D = D - 4: GOTO 1110
1130 IF K$ < > "G" THEN 1150
1140 INV = 1
1150 RETURN
1160 PRINT
1170 PRINT " YOU ARE
     CARRYING IN YOUR
     KNAPSACK"
1180 IF K < > 1 THEN 1200
1190 PRINT "A BRIGHT BRASS
     KEY"
1200 IF B < > 1 THEN 1220
1210 PRINT "A WOODEN BOWL"
1220 IF G < > 1 THEN 1240
1230 PRINT "A BEAUTIFUL GEM"
1240 RETURN
1250 PRINT "YOU WALKED INTO
     A WALL"
1260 W = W + 1
1270 IF W < > 5 THEN 1290
1280 PRINT "YOU'RE STARTING
     TO FEEL DIZZY..."
1290 IF W < > 10 THEN 1310
1300 PRINT "YOU FEEL VERY
     FAINT...WHERE'S THE
     ASPIRIN?!?"
1310 IF W = 20 THEN 1330
1320 RETURN
1330 PRINT "THE ROOM SPINS..."
1340 PRINT "YOU ARE TOO DIZZY
     TO GO ON...GAME OVER"
1350 END
```

—*Daniel Cohn*

HOW TO FEED A SEA MONSTER

First, locate a sea monster. (The best place to find one is in SEASTALKER,* the brand-new undersea story from Infocom's interactive fiction line.)

Next, type in your command: GET OUT OF THE SUBMARINE AND FEED THE CATALYST CAPSULE TO THE MONSTER. Then, swim for your life! Because the trouble with feeding sea monsters is, the monster might decide to feed on you!

There's no telling what will happen next in SEASTALKER. Because, like all of Infocom's interactive fiction, SEASTALKER's designed so that what happens next depends on what *you* decide to do. And you'll be doing plenty, too—your voyage can last for weeks or even months.

So get the closest thing on a disk to going on a real-life sea adventure. Sink your teeth into SEASTALKER*. But when you do—watch out!—or you might just find out somebody has a sweet tooth for you!

INFOCOM™

*It's compatible with almost every popular home computer. SEASTALKER is a trademark of Infocom, Inc.

Cinderella

by Patricia Berry

A FRACTURED FLOWCHART FAIRY TALE

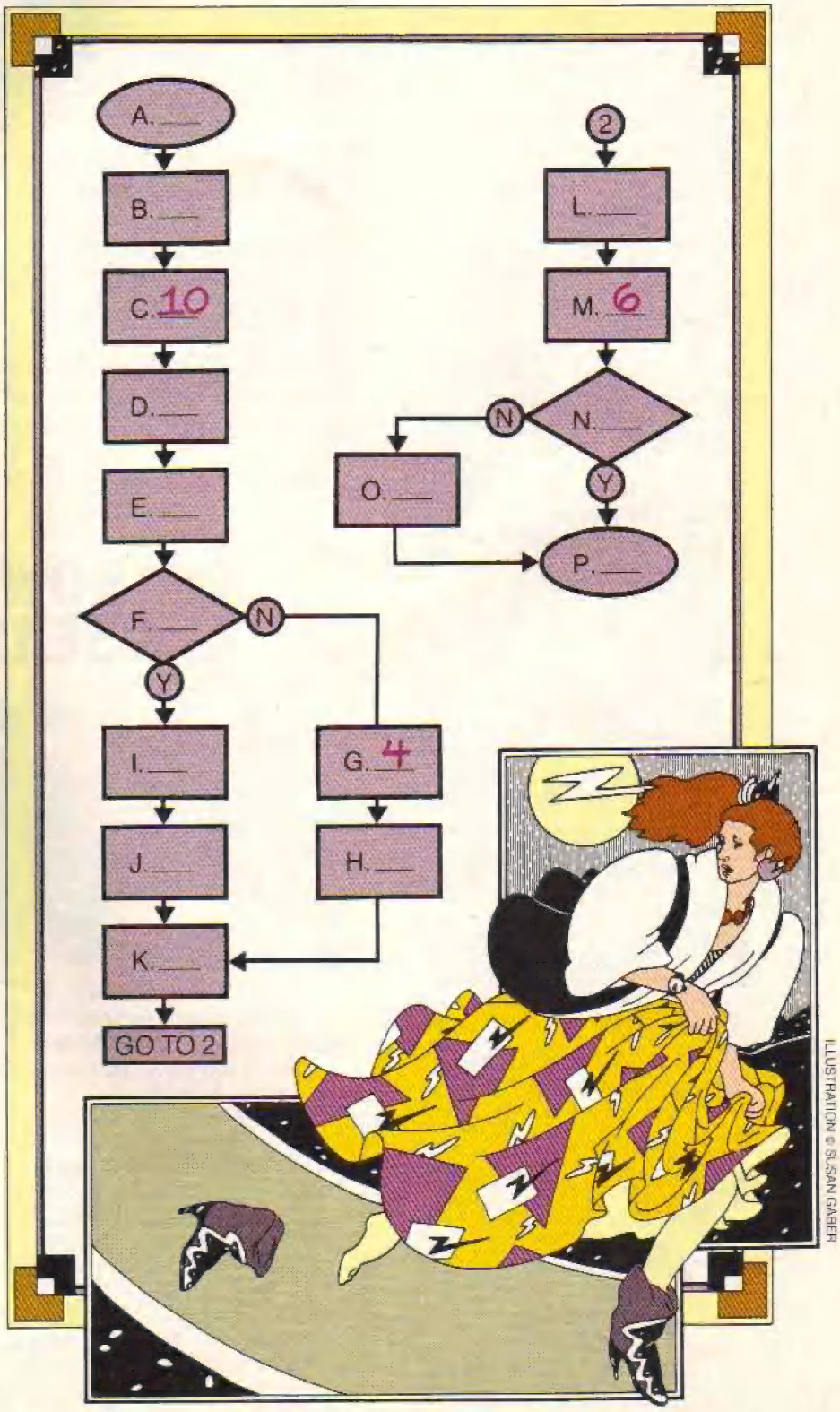
You probably know the story of Cinderella. But you might not recognize it from the jumble of sentences below. Believe it or not, the story is there, but you'll have to do a little work to straighten it out.

Each sentence belongs in one of the boxes in the flowchart. All you have to do is put the number of the correct sentence in each box. (We've done three to get you going.)

The story should start at the top and follow the flow of the arrows. Remember, oval-shaped boxes are either for beginnings or endings. Diamond-shaped boxes are for questions.

That's all there is to it. But you better have the flowchart filled in by the stroke of midnight or this magazine will turn into a pumpkin!

Answer on page 39.



1. **Cinderella lives with mean stepmom and stepsisters**
2. **Shoe fits Cindy?**
3. **Clock strikes twelve. Cindy drops shoe and leaves**
4. **Who believes in fairy godmothers, anyway?**
5. **Waves wand**
6. **Prince brings shoe to Cindy's house**
7. **Once upon a time...**
8. **Cindy goes to party in new dress and glass shoes**
9. **Sorry, wrong fairy tale**
10. **Prince Patrick throws party to find a girlfriend**
11. **Mom makes Cindy stay home**
12. **Fairy godmother arrives?**
13. **Cindy goes to party in old dress and glass shoes**
14. **They live happily ever after**
15. **Cindy and Prince Pat hit it off**
16. **Stepmom and sisters go to party**

ILLUSTRATION © SUSAN GABER

Sneaker Maze

On pages 14-18, you read all about sneakers. Can you find your way through this sneaky maze? **Answer on page 39.**

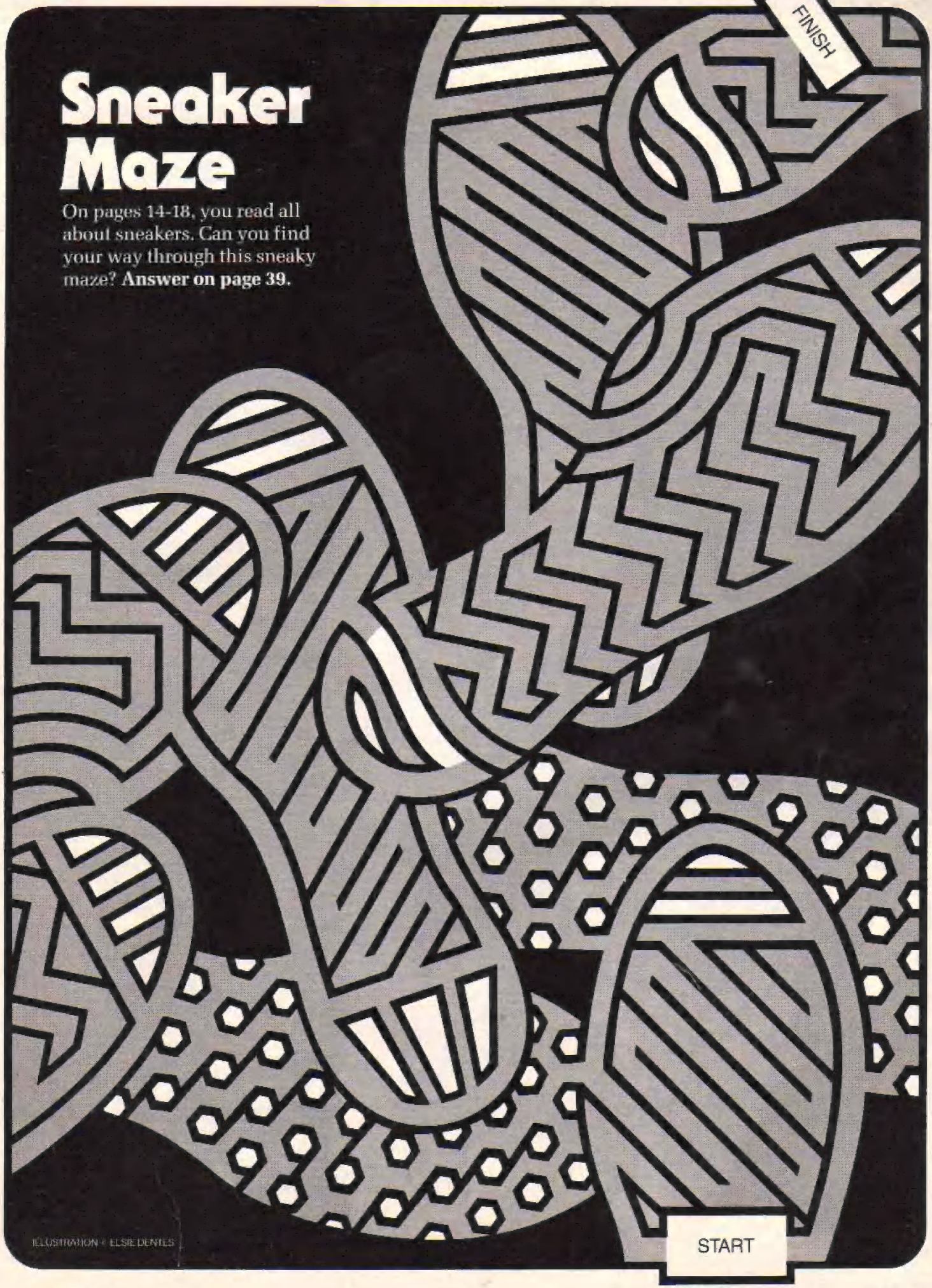


ILLUSTRATION © ELSIE DENTES

Future

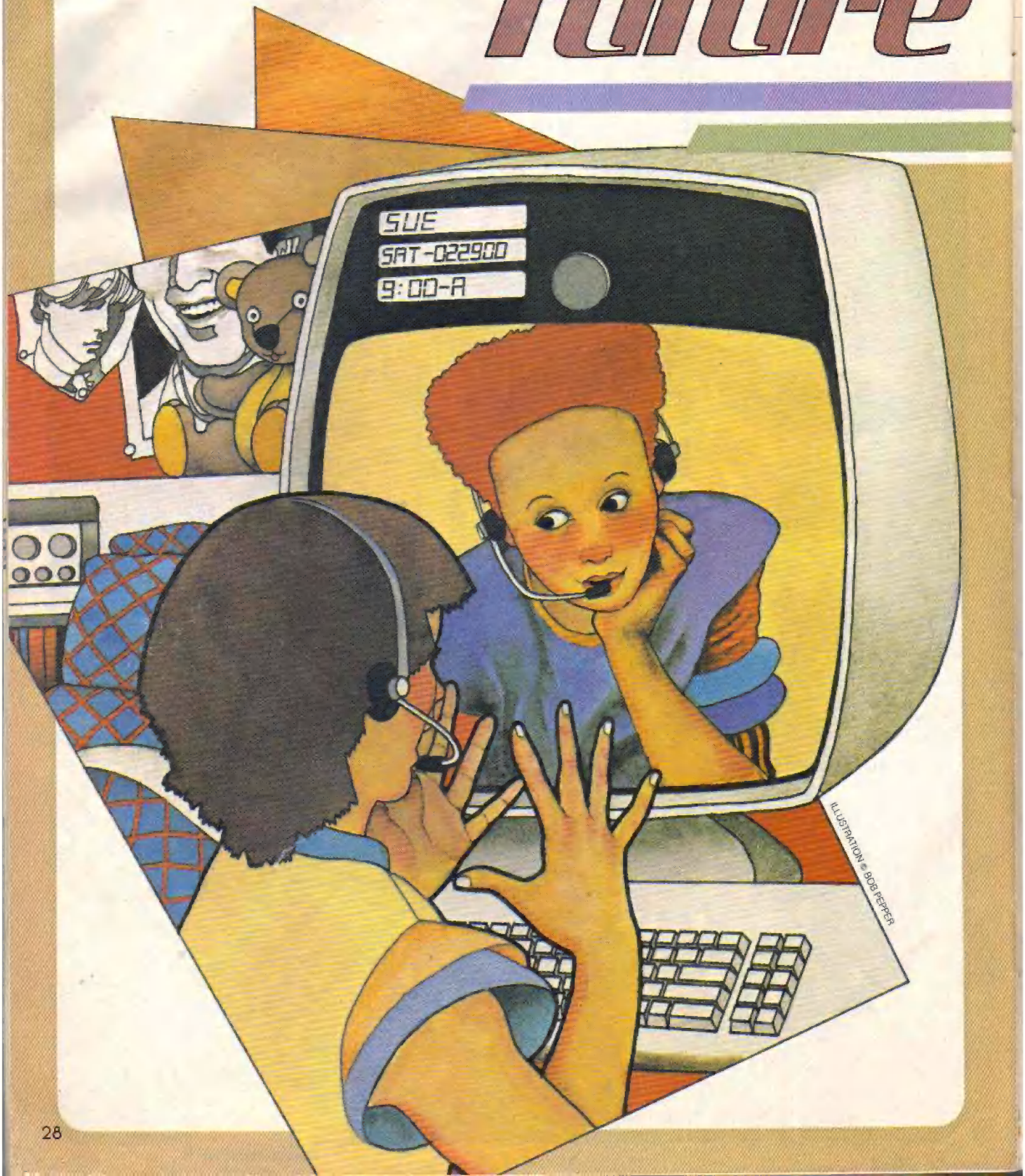


ILLUSTRATION © BOB PEPPER

Phones Don't Leave Home Without Them

by Cynthia Jabs

It was a rainy Saturday in the year 2000. Alice was still asleep when the telephone beeped. She rolled over to check who was calling. She saw her best friend's name flashing on the computer screen. Facing the screen she said loudly, "Phone on. Hi Sue."

Nothing happened. Alice sat up and said again, "Phone on." But the computer couldn't recognize her scratchy early-morning voice.

Alice went over to the keyboard and hit a key to turn off the overnight telephone setting. Then she touched one more key and heard Sue.

"What time is it?" Alice asked.

"Too early, I guess," Sue said. Her voice came from a speaker below her face on the screen.

Alice shuffled back to bed and flopped down. Her bed was almost out of range for the tiny camera at the top of the computer screen. Sue could just make out her friend's dim outline.

"Sorry. But my phone is broken," Sue said. "I'm calling on my mom's phone before she starts work."

Sue's mom was an ear doctor. But she rarely saw her patients in person. When someone with an earache came to a clinic, the computer in the examining room called her on the telephone.

Dial a Patient

With the telephone attached to the computer in Sue's house, Sue's mom would look over the patient's records. She asked the patient questions about what hurt. She could zoom in for a close look at the patient's ear by controlling the camera in the examining room. The computer helped her figure out what was wrong.

"Work? Isn't it Saturday?" Alice asked. She glanced at the top of the computer screen where the date and time appeared. Yes, the day was Saturday. And the time was definitely too early.

"Mom's working today because we leave for vacation soon," Sue said. "Anyway, I can't STAND it without a phone. Can I come over?"

"Sure. That would be great. And bring your broken phone. Maybe my dad can fix it."

Like everyone they knew, Sue and Alice each had her own phone and her own personal phone number. At home they usually plugged their phones into the computer terminals in their houses. That recharged the power cells in the phones. It also let them use the video screen and other computer options with their phones.

The phone Alice carried with her was a small box that clipped into her belt. It had a separate headset with a wire microphone she folded down to her mouth when she wanted to talk.

Sue's phone was the wrist model. It was about the size of a watch. She would hold the phone near her mouth to talk and near her ear when she wanted to listen. It had a tiny screen for messages. Callers left messages when her phone was turned off when she was in school.

Alice figured her dad could fix whatever was wrong with Sue's phone. His regular job was fixing satellites. Usually, Alice's dad worked at home, doing most of his repair work with remote controls. His telephone connected his computer with the satellite station, which connected him with the satellite. Then he used his computer to search through the satellite's circuits.

Phone Races

As she got dressed, Alice listened for some sign of life in the quiet house. Sure enough, her brother Ted was racing cars on his computer already.

Ted's computer screen curved around him like the windshield of a small car. With his race car program, the screen showed the view from the "driver's" seat. It included a picture of the dashboard which he worked with his keyboard. On the screen was a map of the racetrack. ➳

A red light showed where his Corvette was.

Three-dimensional images of trees and obstacles were so lifelike that Ted sometimes rolled out of his seat to avoid a crash. And sometimes he glimpsed the blue Mustang driven by his friend, Bob.

Bob lived nearby. But with telephones attached to their computers, the boys played video games as if they were in the same room. Each of them watched their two cars beam across their separate screens. They drove faster and faster until one of them crashed or won.

Alice knew better than to break her brother's concentration when he was racing. So she typed a message for him that would show up on his screen when his game was over.

Alice found her father's computer active, too. He was sending a sound code to the kitchen computer with his telephone. The phone turned on the oven where a stack of pancakes was waiting. They were steaming hot when Alice got downstairs. Soon Sue arrived.

The girls started making plans while Alice's father took the broken phone away. They wanted to catch their favorite game show.

Modern game shows were not like the old ones where you just watched while other people won prizes. This one lets you play for prizes—with all the other viewers—by hooking your telephone up to the TV. Sue had won points on the show the week before by knowing the name of a singer from the 1980's who wore one glove.

They were huddled in front of Alice's computer screen when her father came back with the newly-repaired phone.

"I'm glad you two are together today," he said. "Now you can let the phone lines cool off."

The two girls laughed. "No, Dad," Alice said. "I think Sue is going home now. It's a lot more fun to visit by phone!"

Today's Futuristic Phones

The story you just read is set in the year 2000. But phones are already doing some pretty amazing things. Here is what some people can do with phones today. You may be able to do similar things with your telephone in the future.

● You don't have to pick up a newspaper or watch TV to keep up with the news. In England, people can dial a service that sends a list of the day's news to their computer screen. When users come across an interesting story, a keyboard command can show more of the story or make a print out.

ILLUSTRATIONS © BOB PEPPER

● Some stores have computer catalogs for home shopping. Let's say you want to buy a desk. You might call up a store that would send pictures of their desks to your computer screen. You could pick one out and order it directly from the factory.

● People who depend on the telephone for business often use cordless phones. They can take them wherever they go. The phones have small antennas. They can receive calls from anywhere in the world. As these telephones get smaller, easier to make, and cheaper to use, more and more people will carry them.

● It's possible now to *see* people over the telephone. Businesses often use this service to meet with people in other cities. Since it usually costs more than $1,000 per hour, it's not yet a practical way for everyone to keep in touch. But phone viewers are certain to become more common as they become less expensive in the years ahead.

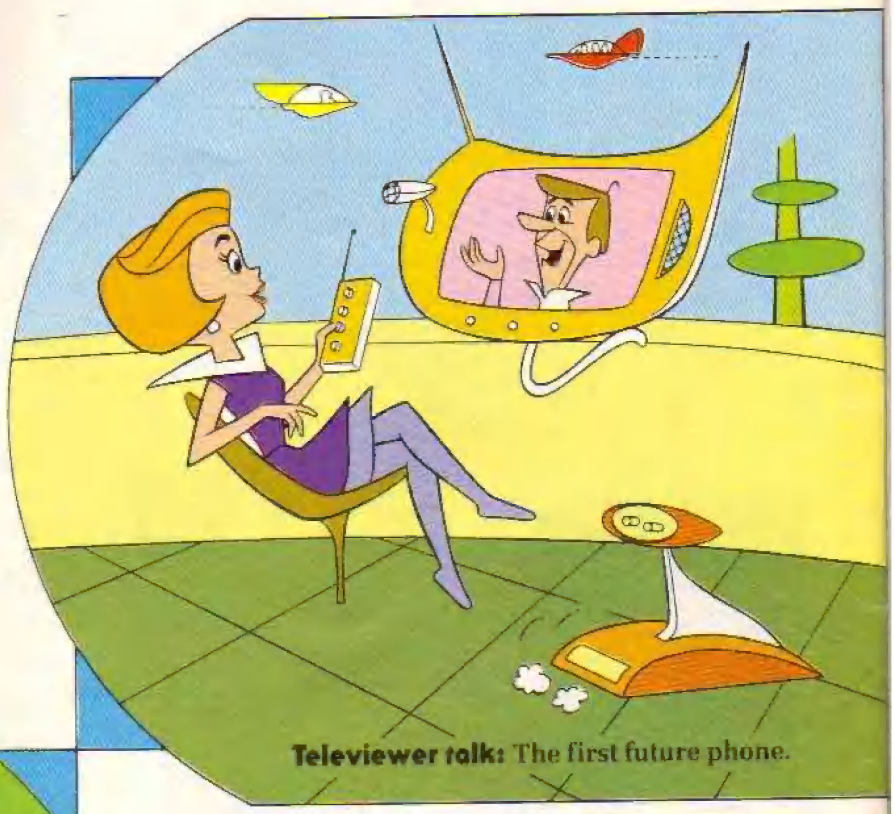
MEET THE JETSONS!

TV's First Space Age Family

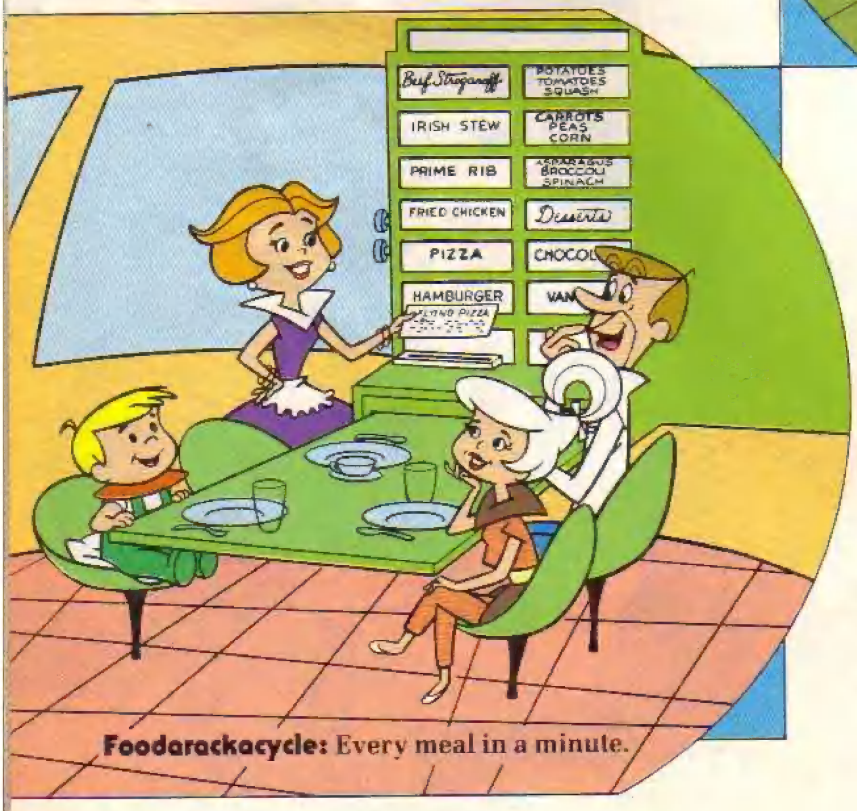
by Jim Lewis

High-tech video telephones may seem amazing. But they're old news to the Jetsons. George Jetson and his family have been using televiewer space phones and other out-of-this-world gadgets for more than 20 years. Now TV's first space age family is coming back with a whole new high-tech household.

"It's amazing how people are fascinated by the ideas we came up with," Joseph Barbera told CONTACT. Mr. Barbera helped create *The Jetsons*. When *The Jetsons* was first shown in 1962, its technology seemed incredible. Gradually, however, today's real technology began to catch up with TV's 21st century family.



Televiewer talk: The first future phone.



Foodarackacycle: Every meal in a minute.

But now 41 new episodes of the show are coming your way. These episodes will feature all new technology, plus a new character named Orbitty, an indescribable "space age critter."

Space Age Home

Here's a closer look at the Jetsons' typical 21st-century-day:

George, his wife Jane, his kids, Judy and Elroy, and his very friendly dog, Astro, live in a push-button world. It's filled with space cars that fold to the size of a briefcase,

and floating Spaceburger restaurants.

What's doing inside the family's Sky Pad Apartment—built on a giant tower that lifts the building above fog and smog?

- Elroy, 9, is talking to the planet Plutonia over his 14 MZY Oscilloscopic radio. When he's finished, Elroy will put on his space boots and take a walk around the ceiling.
- Judy, 15, is dancing above the anti-gravity floor to rock star Jet Screamer's latest hit. She's just finished studying outer space math problems with her robot.
- Jane has been exercising her sore button-pushing finger with 3-D TV star Jack Jetwash. Now she's putting a micro-tablet in the reading machine to listen to today's newspaper.
- George is on his way home from a typically tough three-hour work day at Spacely Sprockets. He's been testing the company's Solar-Powered Nuclear Stamp Licker.

Fun-Filled Future

Did the Jetsons' creators really think our world of the future would be like this?

"We let our imaginations run free," says Joseph Barbera. "We took ideas about the future and played them for laughs." But, he adds, some of those laughs turned out to be right on target. "Computers and telephones with video screens were used 25 years ago by the Jetsons," he says. "Now they are used in homes and offices."

To stay ahead of today's technology, Barbera and his staff are designing zany high-tech devices for the show's new episodes. They won't say exactly what kind of silly future features the new show will have.

George Jetson: A top-notch button-pusher.

© 1985 HANNA-BARBERA PRODUCTIONS, INC.

Elroy: Ready to teleport to school.

But, says Barbera, "We're designing devices that we think will be available in the year 2000."

Will these new inventions help the Jetsons become high-tech trendsetters again? No one knows for sure. But one thing is certain: tomorrow's technology will still cause problems for poor George Jetson. As George once said after a long day battling space-age gadgets: "After a century of brilliant scientific progress, you'd think someone would invent a decent fly swatter."

Coming Attractions

ILLUSTRATION © BARBARA HAMLIN

Growing Homes

"Don't forget to water your walls!" That might be a common reminder and chore for kids in homes of the future. According to some architects, plants might be made into livable—and living—houses.

The plants would be fertilized, pruned, trimmed, and guided to grow in certain directions that would form walls of buildings. This new science is called "biotecture." The plants would be thick enough to provide privacy and keep homes warm in winter and cool in summer.

There's also another suggestion for future homes. Buildings could be grown from new chemicals. People who wanted to build their own homes might buy a do-it-yourself package of chemicals. The directions might call for combining several liquids whose chemicals would grow, like crystals, into hard structures.

Of course, both these ideas are still on the drawing (or growing) boards. But some scientists and architects say homegrown homes may be around within 50 years.

Having A Ball

"Space balls for sale. Get a package of 1,000 for only $200!" These balls aren't for everyone because they are very special. They *are* the first items made in outer space that are ready to be sold here on earth.

In space, where there is no gravity, astronauts were able to make tiny, perfectly round plastic balls. The balls are much smaller than any that could have been made on planet earth.

Scientists and other people who use very accurate microscopes can't wait to get their hands on the space balls. They can practice focusing on the edges of the balls to make sure their microscopes are in working order.

What will space provide us earthlings with next? Don't be surprised if one day you find yourself using tiny space bats!

ILLUSTRATION © TRACY GARNER

Light Up Your Life

A new flashlight gives off a beam of light that is 1,500 times brighter than an ordinary flashlight. The light can be seen from 30 miles away. At 17 pounds, this gadget is a pretty heavy invention.

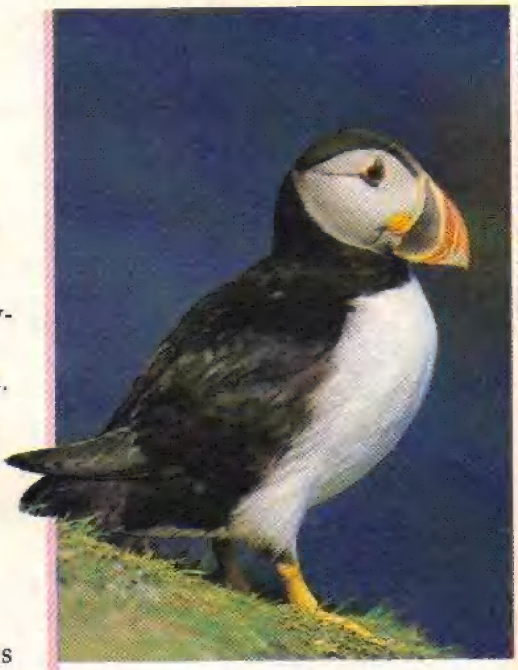


PHOTO: ANIMALS ANIMALS © ROBERT MAIER

Puffin Parade

Puffins, those sea birds with the large yellow, red, and blue beaks, are making a comeback on an island off the coast of Maine. About 100 years ago, hunters killed off almost all the Maine puffins. They used the birds' feathers to help decorate women's hats. Scientists wanted to bring back the sea birds to where they once nested.

So three years ago, Steve Kress and other scientists gathered 100 puffins from Newfoundland, Canada. They put bands around the birds' legs so they could study and keep track of them.

Now, some puffins *without* bands have appeared on the island. And 14 pairs of puffins have bred there. Scientists and bird lovers are delighted.

In 1986, Kress plans on placing decoys and tape recordings of puffin calls on a neighboring island in an effort to attract some of the young birds who nest there to come on over!

Plastic Ice

In Miami, Florida, you can ice skate under the hot August sun. But not on ice, on plastic!

Astro-Ice comes in sheets that are connected together by narrow strips. Then the sheets are sprayed with a chemical called silicon which makes them especially slippery.

Skaters love their new rink. Not only does Astro-Ice feel like the real stuff, it even gives off the same scraping sounds when people skate across it.

Rink owners like Astro-Ice, too. Clean-up only calls for vacuuming and spraying. And there's no need for temperature-controlling equipment.

After 15 years, the sheets of fake ice will wear out. But then all you need to do is turn them over—and lace up your skates! Perhaps your neighborhood will be getting a plastic-coated rink for year-round skating.

ILLUSTRATION © PAT CUMMINGS

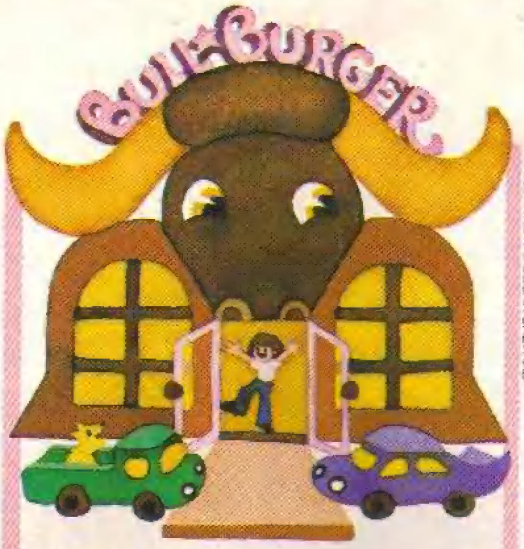


ILLUSTRATION © SUSAN SHEPARD

Bull-oney

Imagine ordering a hamburger "electrified" instead of "rare," and being able to choose between a "cowburger" and a "bull-burger."

Scientists have discovered that applying a little electricity to red meat before it is ready for the market makes it more tender.

Most of the beef people eat comes from cows, because bull meat is too tough. But actually, bull meat is more healthful. It contains less fat than meat from cows. Bulls are also cheaper to raise than cows.

So, by giving bull meat a little "zap," people may eat better and save money at the same time. And that's no bum steer!

Movin' to the Beat

There's new hope for children with hearts that beat extra-fast—a mini-pacemaker! The whole gadget is no bigger than a small bar of soap. It can control the beat of the body's most important muscle.

Doctors place the pacemaker, a tiny, battery-powered computer, near the heart. There it gives off electric signals to keep the heart beating at a normal pace—a little less than 200 beats per minute.

Space Dream House

Space engineers in the U.S. have high-flying dreams! They are drawing up plans for a space station to be built in the 1990's. (One artist's idea is below.)

The design includes a space shuttle driveway, laboratory modules and an antenna to communicate with satellites.

Large white fins will help keep the station cool. Space tugboats can pull into special hangars after carrying satellites into higher orbits.

The whole thing will be powered by energy from the sun. It's a hot new space-age project!

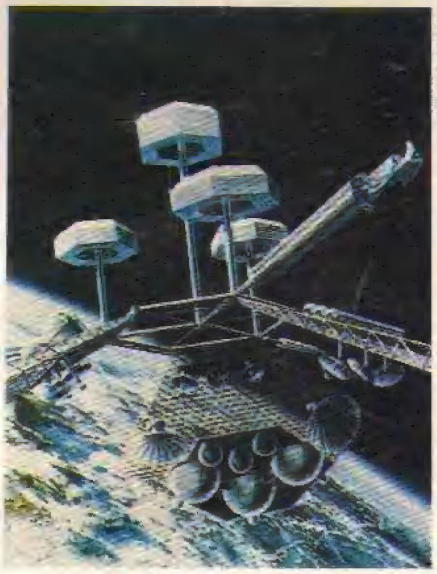


PHOTO © NASA

So What's New?

You tell us and you'll get a nifty CONTACT T-shirt—if we print your story. Send us any science stories that have to do with the future (which could even be next week!) Send stories to:

Coming Attractions
P.O. Box 599
Ridgefield, NJ 07657

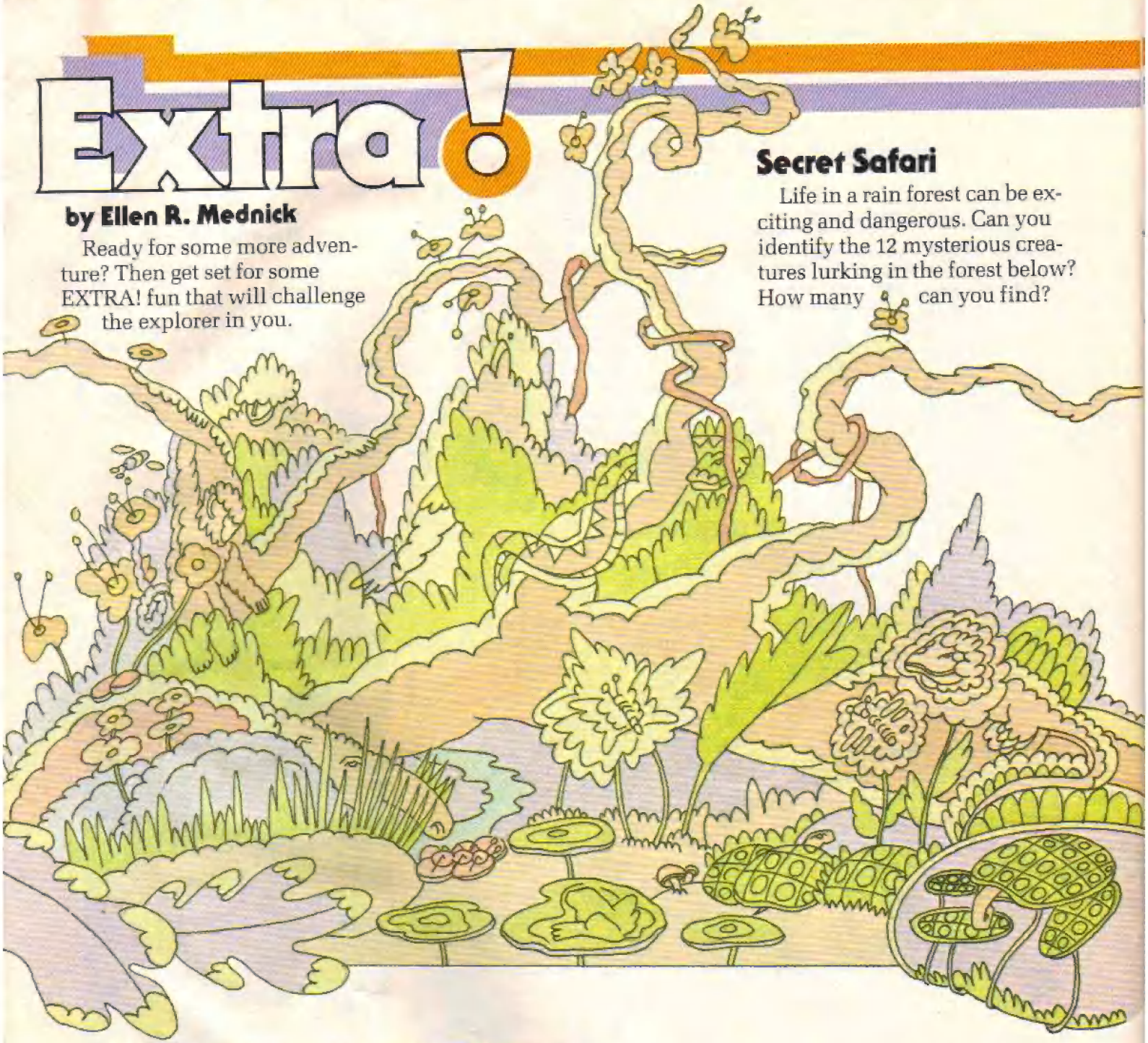
Extra!

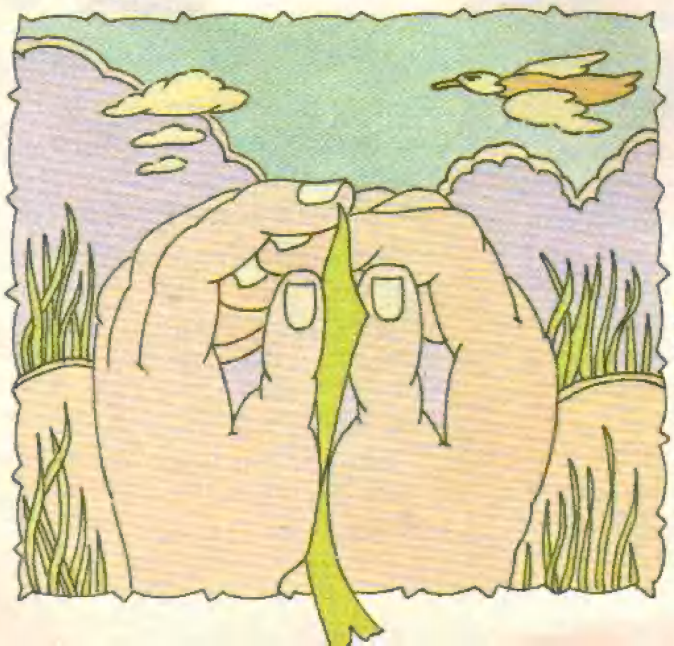
by Ellen R. Mednick

Ready for some more adventure? Then get set for some EXTRA! fun that will challenge the explorer in you.

Secret Safari

Life in a rain forest can be exciting and dangerous. Can you identify the 12 mysterious creatures lurking in the forest below? How many can you find?





ILLUSTRATIONS © MICHAEL DONATO

Whistling in the Grass

Looking for a way to make some rain forest sounds? Pick a long, flat blade of grass. Hold it tight and stretched between the edges of both thumbs. *(See diagram.)* The blade of grass should be standing in the middle of the space formed by your two thumbs. Put your lips against your thumbs. Blow hard through the space. The noise should sound like a squeaking mouse, or a cawing crow or a trumpeting elephant.

Why It Works: When you blow on a blade of grass it vibrates. This vibration makes the sound you hear. It's like plucking the string of a guitar.

Stay in Touch

Now that you're an expert on telephones of the future, try figuring out these lines of communication. Just unscramble the words below. If you've done the puzzle correctly, the circled letters will spell out something that brings music to your ears.

We've done one to get you started.

PHNGROOHPA P (H) O N O G R A P H

Now try your hand at these.

TROCUMEP _ _ _ _ _ _ (_) _

RAECMA _ (_) _ _ _ _

IDRAO _ _ (_) _ _

NEPLETEOH _ _ _ _ (_) _ _ _ _

HELTPRAEG _ _ _ _ _ _ _ _ (_)

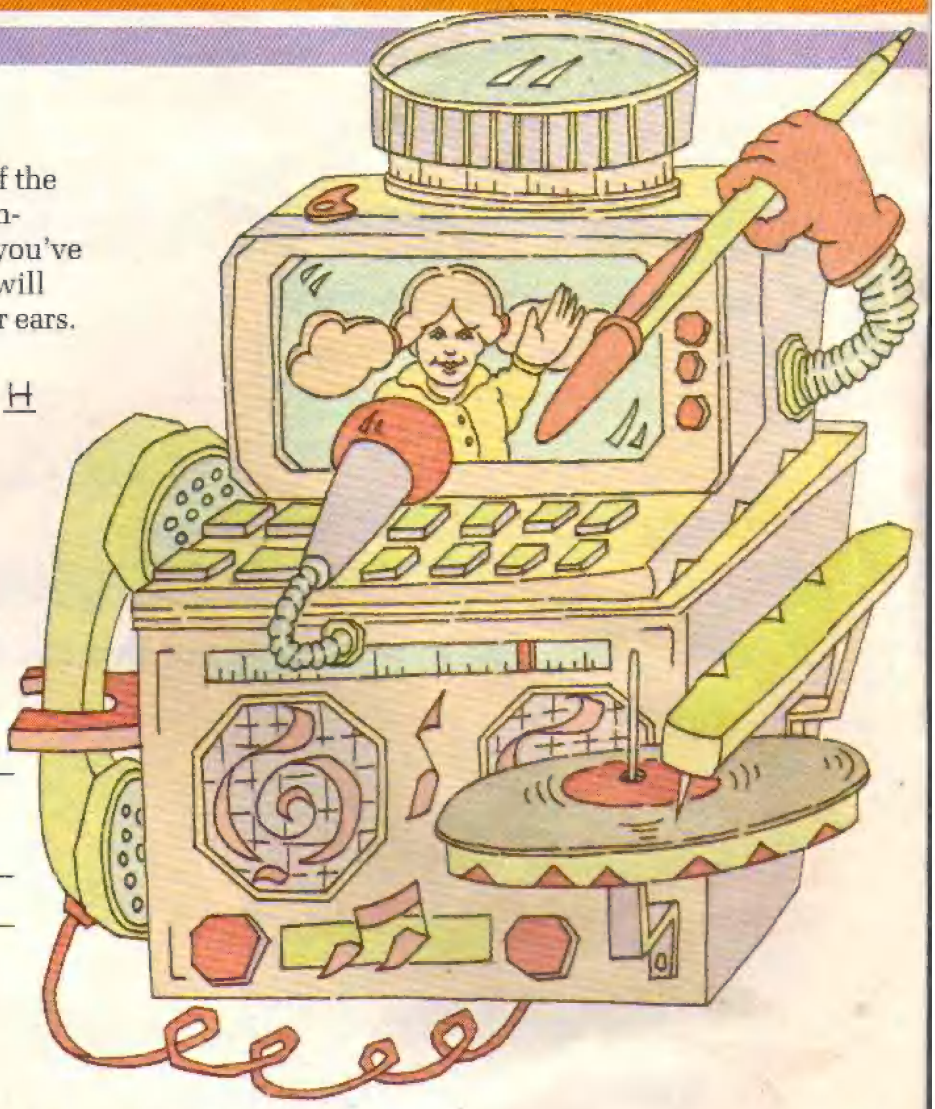
MCROPIHOEN _ _ _ _ _ _ _ (_) _ _

NEP _ _ (_)

WYRETTRIPE _ _ _ (_) _ _ _ _ _ _

NLETEOVIIS _ _ _ _ _ _ (_) _ _ _

Check page 39 for the answers.



Happy Feet Contest

Carl Lewis, Joan Benoit and Bill Cartwright all have lucky sneakers! Do you? Let's hear your lucky sneaker story. We'll choose one and the winner will receive a two-foot long, gigantic plastic sneaker. It's the perfect place to stuff your CONTACT magazines.

Send your entries to:

3-2-1 CONTACT
Shoe Story
P.O. Box 599
Ridgefield, NJ 07657

Contact Us!

Win a T-shirt! We want to know what you think of CONTACT. Fill out this form and send it to us. We'll put all of them in a box. Then we'll pick 10 without looking. Each winner will get a choice of either a CONTACT or Enter T-shirt. Mail your form to:

Reader Poll
3-2-1 CONTACT
P.O. Box 599
Ridgefield, NJ 07657

1. First, tell us about yourself.

Name_____ Age____ Boy or Girl_____ Grade____

Address_____

City_____ State____ Zip Code_____

What type of T-shirt? CONTACT____ Enter____ **Is this your first issue of CONTACT?** yes____ no____

Were you a subscriber to Enter last month? yes____ no____ T-shirt size_____

2. Now tell us what you thought of this issue of CONTACT.

Here is a list of stories. Mark each with an X.

Title	I Liked It!	I Didn't Like It!	I Didn't Read It!
Out on a Limb	☐	☐	☐
Any Questions?	☐	☐	☐
Factoids	☐	☐	☐
Future Phones	☐	☐	☐
Meet the Jetsons	☐	☐	☐
Coming Attractions	☐	☐	☐
Sneak Preview	☐	☐	☐

Title	I Liked It!	I Didn't Like It!	I Didn't Read It!
Ask Enter	☐	☐	☐
EXTRA!	☐	☐	☐
Basic Training	☐	☐	☐
Maze/Flowchart	☐	☐	☐
Software Review	☐	☐	☐
Newsbeat	☐	☐	☐

3. Hang On! You're almost done.

Does your family own a computer? yes____ no____ **What kind?** Apple____ Atari____

IBM____ Tandy/Radio Shack____ Commodore 64____ T.I. 99/4A____ Other____

Do you have a computer in your school? yes____ no____ **If yes, how often do you get to use it?**

Less than once a week____ 1 or 2 times a week____ 3-5 times a week____

What did you think about the Enter section? Liked It!____ Didn't Like It!____ Didn't Read It!____

What programming language(s) do you know? _____

How would you rate yourself as a computer user? Never tried one____ Beginner____

Intermediate____ Advanced____ Computer wiz____

What peripherals does your family own? (Check all that apply) Video game player____

Disk drive____ Joysticks____ Printer____ Cassette drive____ Modem____ Touchpad____

Light pen____ Mouse____ Speech synthesizer____ Other (please explain)_____

How many times did you buy software in the last 6 months? one time____ two times____

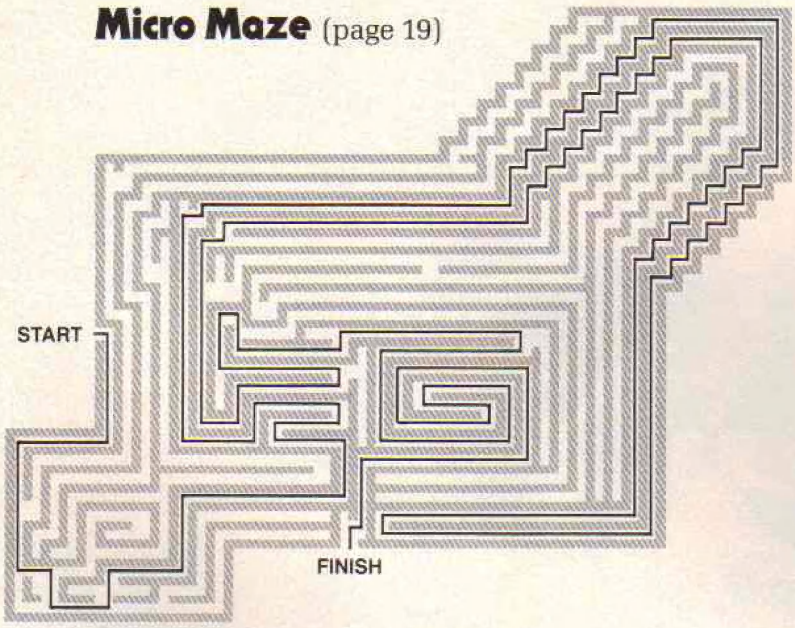
3 times____ 4____ 5____ 6____ 7____ 8____ 9____ 10____ More than 10____

Each time you bought software, how many software packages did you buy? 1 package____

2 packages____ 3____ 4____ 5____ 6____ 7____ More than 7____

Did It!

Micro Maze (page 19)

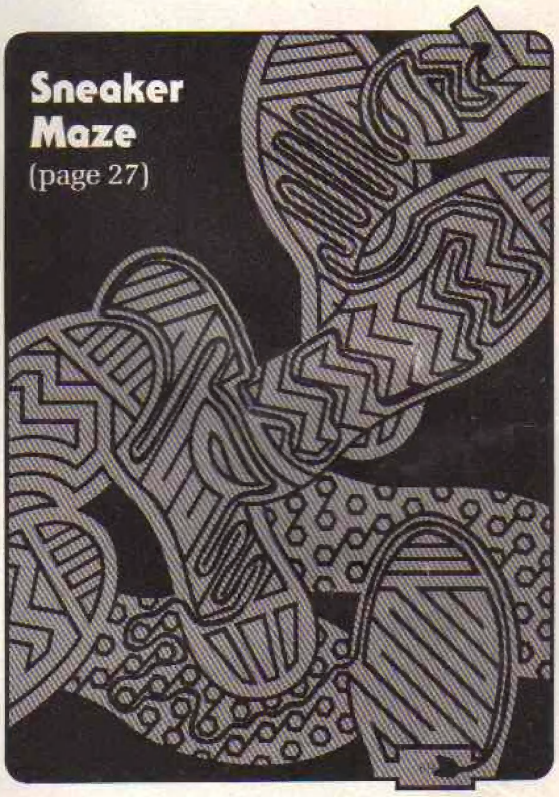


Stay in Touch (page 37)

P (H) ONOGRAPH
COMPUT (E) R
C (A) MERA
RA (D) IO
TELE (P) HONE
TELEGRAP (H)
MICROPH (O) NE
PE (N)
TYP (E) WRITER
TELEVI (S) ION

The circled letters spell HEADPHONES.

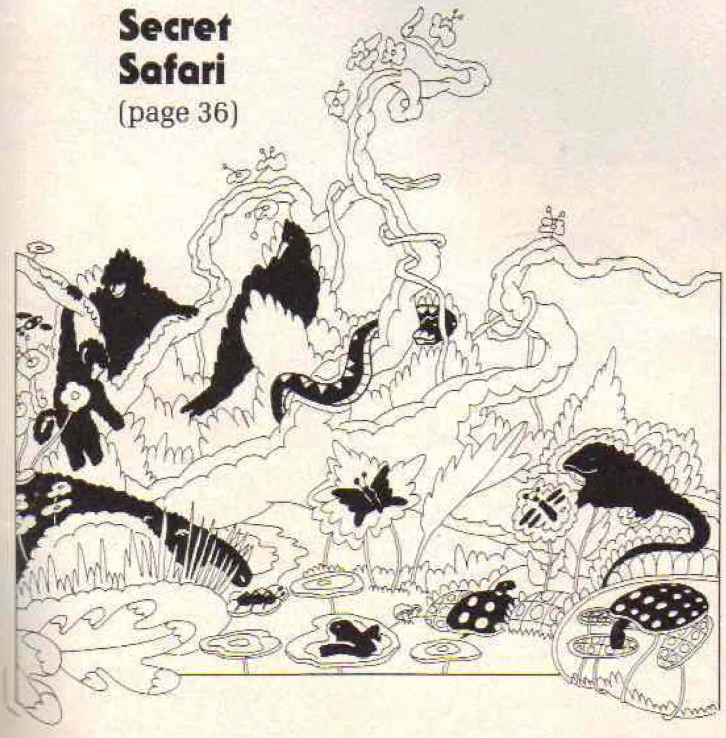
Sneaker Maze (page 27)



Cinderella (page 26)

A. 7	E. 16	I. 5	M. 6
B. 1	F. 12	J. 8	N. 2
C. 10	G. 4	K. 15	O. 9
D. 11	H. 13	L. 3	P. 14

Secret Safari (page 36)



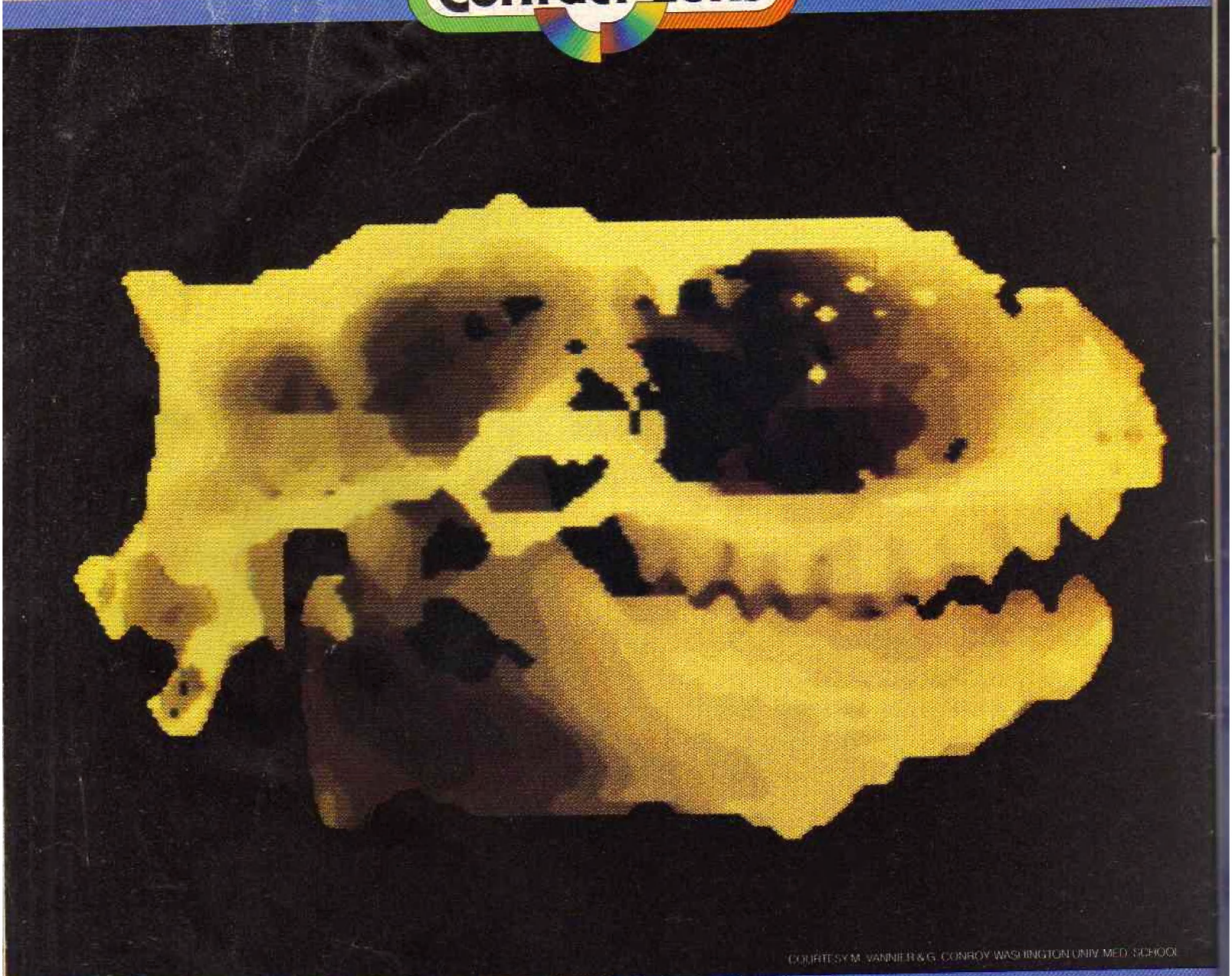
Next Month!

Here's a sample of what you'll find in the next issue of 3-2-1 CONTACT

How Did They Do That?
Get a behind the scenes look at the making of a new movie, "Return to Oz."

Fasten Your Seat Belts!
Discover how computers are designing and running roller coasters.

Plus ENTER the world of computers and More!



COURTESY M. VANNIER & G. CONROY, WASHINGTON UNIV. MED. SCHOOL

Skullbusters?

What's this? A new video game character? Well, it *does* appear on a computer screen. But it's not a video game. It's a computer image of a skull.

The skull came from a small mammal that died some 30 million years ago. Over a long period of time, it became a fossil. Recently, scientists discovered the fossil and wanted to look inside. "But complete skulls are so rare you don't want to break into them," explains scientist Glenn Conroy.

So Conroy and his team used a computer to help out. They took pictures of the skull, using a machine that is something like X-ray. Then they stacked up the pictures on a computer screen to form a 3-D image.

The picture above shows the inside of the skull as it would look if all the hard rock inside were hollowed out and the skull were sliced down the middle.

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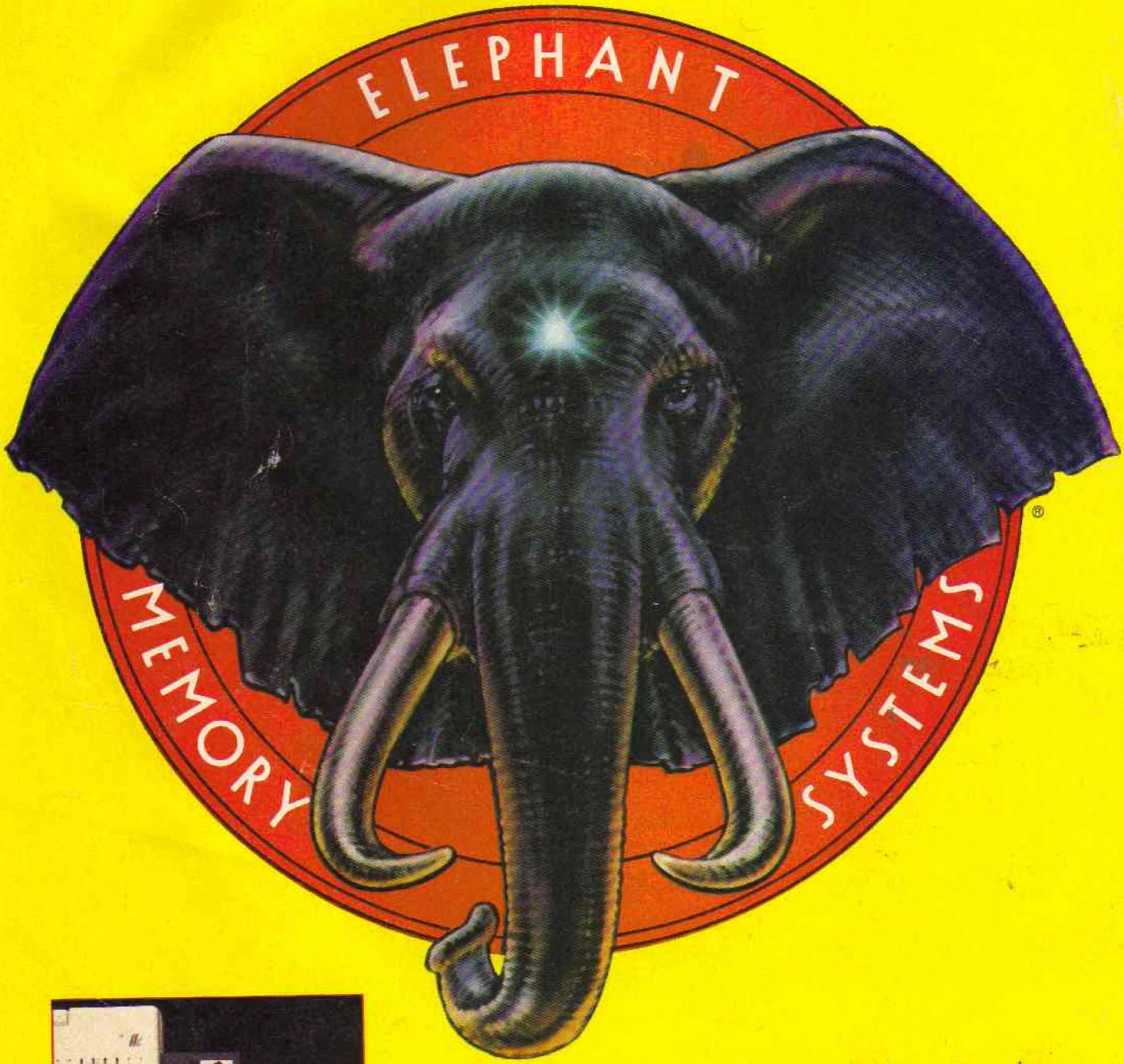

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